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62D CONGRESS : : 2D SESSION

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ANNUAL REPORTS, WAR DEPARTMENT

FISCAL YEAR ENDED JUNE 30, 1911

TWENTY-FIRST REPORT OF THE

BOARD OF ORDNANCE AND FORTIFICATION

TO THE SECRETARY OF WAR

1911

December 11, 1911.—Referred to the Committee on Appropriations and ordered to be printed

WASHINGTON
GOVERNMENT PRINTING OFFICE
1911

WAR DEPARTMENT,
Washington, December 9, 1911.

SIR: Pursuant to the provisions of the act of Congress approved February 24, 1891, I have the honor to transmit herewith a signed copy of the Twenty-first Annual Report of the Board of Ordnance and Fortification, covering the fiscal year from July 1, 1910, to June 30, 1911.

Very respectfully,

H. L. STIMSON,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Report
of
The Board of Ordnance and Fortification.

WASHINGTON, D. C., *October 31, 1911.*

The SECRETARY OF WAR.

SIR: Under the provisions of the act approved February 24, 1891, the Board of Ordnance and Fortification has the honor to submit, for transmission to Congress, its twenty-first annual report, covering the fiscal year from July 1, 1910, to June 30, 1911.

PERSONNEL.

Several changes have occurred in the personnel of the Board since the last report. Maj. Gen. Arthur Murray was relieved and Capt. Stanley D. Embick, General Staff, detailed by paragraph 5, Special Orders No. 129, June 3, 1911. Lieut. Col. Edwin St. J. Greble, General Staff, was detailed as a member by paragraph 16, Special Orders No. 306, December 31, 1910, vice Brig. Gen. M. M. Macomb. Capt. Robert R. Ralston, Corps of Engineers, was detailed as recorder by paragraph 6, Special Orders No. 54, March 7, 1911. Hon. William Warner was appointed civilian member March 4, 1911, vice Gen. Thomas J. Henderson, deceased.

The Board now consists of the following-named members: Maj. Gen. Leonard Wood, Chief of Staff, president; Brig. Gen. William Crozier, Chief of Ordnance; Brig. Gen. William H. Bixby, Chief of Engineers; Brig. Gen. E. M. Weaver, Chief of Coast Artillery; Lieut. Col. Edwin St. J. Greble, General Staff; Capt. Stanley D. Embick, General Staff; and Hon. William Warner, civilian member, with Capt. Robert R. Ralston, Corps of Engineers, recorder.

LEGISLATION.

The only special legislation affecting the Board is contained in the fortifications appropriations act approved March 4, 1911, making appropriation for continuing the work of the board, as follows:

> To enable the board to make all needful and proper purchases, experiments, and tests to ascertain, with a view to their utilization by the Government, the most effective guns, small arms, cartridges, projectiles, fuses, explosives, torpedoes, armor plates, and other implements and engines of war, and to purchase or cause to be manufactured, under authority of the Secretary of War, such guns, carriages, armor plates, and other war material as may, in the judgment of the board, be necessary in the proper discharge of the duty devolved upon it by the act approved September twenty-second, eighteen hundred and eighty-eight; to pay the salary of the civilian member of the Board of Ordnance and Fortification provided by the act of February twenty-

fourth, eighteen hundred and ninety-one, and for the necessary traveling expenses of said member when traveling on duty as contemplated in said act; for the payment of the necessary expenses of the board, including a per diem allowance to each officer detailed to serve thereon, when employed on duty away from his permanent station, of two dollars and fifty cents a day; and for the test of experimental guns, carriages, and other devices procured in accordance with the recommendation of the Board of Ordnance and Fortification, twenty-five thousand dollars, the expenditure of which shall be made by the several bureaus of the War Department heretofore having jurisdiction of the same, or by the board itself, as the Secretary of War may direct: *Provided*, That before any money shall be expended in the construction or test of any gun, gun carriage, ammunition, or implements under the supervision of the said board, the board shall be satisfied after due inquiry that the Government of the United States has a lawful right to use the inventions involved in the construction of such gun, gun carriage, ammunition, or implements, or that the construction or test is made at the request of a person either having such lawful right or authorized to convey the same to the Government.

GENERAL OPERATIONS.

The statute requires the Board annually to submit a statement of its general operations. Brief statements are made under appropriate headings of the objects for which allotments have been made. Not a great deal of new work has been undertaken in the past year, the principal activity of the Board having been directed to the completion of extensive experiments previously inaugurated, though provision has been made for purchase abroad of types of observing platforms for the field artillery, the present long and accurate range of such guns necessitating a greater field of observation than is possible from the usual ground level. The year has witnessed completion of an extended series of armor-plate tests, and also of tests of reenforced concrete for fortifications; the adoption of a satisfactory automatic mine anchor, and of types of mechanical data transmitters for guns and mortars, while experiments with electrical transmitters are still in progress.

A useful and necessary part of the Board's work has been the consideration of the great numbers of military inventions submitted to the Government. All have been carefully considered and such as gave promise of utility have been favorably reported upon for development or adoption. Appendix B contains a list of subjects considered.

ARMOR-PLATE TESTS.

January 4, 1906, the Board made an allotment of $54,019.40 to cover the cost of targets, armor plates, projectiles, powder, fuzes, and all other expenses of making tests of armor plate in accordance with program prepared by the Chief of Ordanance at the request of the board. On May 4, 1907, the allotment was increased by $2,500 for continuing the experiments. Subsequent allotments were made on April 7, 1910, of $500, and August 23, 1910, $650. Report of the firings has been received and the results of all tests analyzed and made available for consideration.

MEANS FOR PREVENTING EROSION OF GUNS.

On January 2, 1908, the Board made an allotment of $2,500 to cover the cost of altering a 6-pounder gun, procuring ammunition, and conducting test of a method of preventing erosion of guns proposed by Mr. J. H. Brown. On April 2, 1908, the allotment was increased by $475. On completion of the firing of the 500 rounds provided for by these allotments, Mr. Brown was given authority to fire 100 additional rounds at his own expense.

Several distinctive features were included in the tests of the Brown method, and while the erosion was less than that of the other guns fired for comparison, the reason was not apparent.

At the time the original allotment was made for test of Mr. Brown's method an allotment of $5,000 was provided for tests of other means of preventing or reducing erosion in similar guns and some progress in the tests had been made when the Board, on recommendation of the Chief of Ordnance, reallotted the unexpended balance of the $5,000 for the purpose of tests to determine, by a process of elimination, to which of the several distinctive features of Mr. Brown's method, if any, the lessened erosion was due. During the progress of these tests it became apparent that the information being obtained would probably not hold good for larger calibers, and on December 1, 1910, an allotment of $8,000 was made for a test in 6-inch guns of the Brown system of preventing erosion in comparison with the latest system in use by the Ordnance Department. The tests have been completed, but report has not yet been received.

THE EMERY DISAPPEARING CARRIAGE.

There have been no developments, so far as the Board is informed, in connection with the Emery gun carriage, and the board can only repeat what has been said heretofore in regard to the history of this carriage. All the work on the Emery design has been done under direct legislative enactment, and the only part to be taken by the Board in the matter is that, when completed, if ever, the carriage is to be tested under its supervision.

The construction of an Emery 12-inch elevating carriage, as it was called, was authorized by special act of Congress appropriating $130,000 for the purpose in February, 1893, and a contract was entered into in March of that year with Mr. A. H. Emery, though the actual work of construction was not commenced until 1896, when, by act of June 6, an additional appropriation of $10,000 was made for a loading apparatus for the carriage, and the inventor was relieved of the obligation of giving bond for the return of any money paid him should the carriage not prove to be successful. By act of May 25, 1900, the sum of $40,000 was added to the contract price of the carriage, and by act of March 3, 1903, the further sum of $40,000 was appropriated to enable Mr. Emery "to complete and erect the 12-inch carriage." The total amount appropriated for this carriage and appurtenances up to this time was therefore $220,000, of which $135,656.98 was paid Mr. Emery.

The fortification appropriations act of April 21, 1904, contained a provision authorizing the Secretary of War, in his discretion, to close the contract under which Mr. Emery was working and to make a new contract with him for either an 8 or 10-inch carriage, to be furnished in place of the 12-inch, together with its foundations, erection, and preliminary tests, ready for proof tests by the Board, and to pay for this new carriage the act authorized the expenditure of the $84,343.02 remaining from prior appropriations, payment to be made "in such sums and at such times" as the Secretary of War "shall, in his discretion, think best."

In accordance with the terms of the act referred to, all work on the 12-inch carriage was suspended, and on June 13, 1904, a contract was entered into by the Chief of Ordnance with Mr. Emery for one 10-inch carriage of his design.

The sundry civil appropriation act of May 27, 1908, contained the following provision:

> To enable A. H. Emery to complete the gun carriage he is making for the Government, the Secretary of War is hereby authorized and directed to increase the price of said contract to be paid to the said Emery for the said carriage by the sum of thirty thousand dollars, which sum is hereby appropriated, twenty thousand of which is to be paid to him on the approval of this act, five thousand when he is ready to put in the foundation for this carriage, and the other five thousand when he is ready to erect the carriage for its preliminary test.

In the latter part of 1908 Mr. Emery constructed a railroad track connecting the site selected for his carriage at Fort Hancock with the Sandy Hook proving ground railroad. This track was used for the transportation of material for the construction of the concrete foundations for the carriage. Under the provisions of the act of May 27, 1908, Mr. Emery was paid $5,000 for the completion of this work, since which time no further deliveries have been made.

Of the $114,343.02 available for the execution of the present contract with Mr. Emery for his carriage, $100,811.51 has been paid him.

There may be added to the $114,000 mentioned above the sum of $135,656.98 paid under the first contract, which was canceled by congressional authority, so that the total amount authorized has been a quarter of a million dollars. Of this sum there remains to be paid Mr. Emery $13,531.51, or slightly more than 5 per cent of the total amount authorized.

In its last annual report the Board stated that 17 years had elapsed since the construction of a carriage of Mr. Emery's design was first authorized. This remark may now be varied by saying that 18 years have passed and the Government still has nothing to show for the expenditure of 95 per cent of the appropriations except the foundations for the carriage which were put in 3 years ago in order to enable Mr. Emery to obtain an additional $5,000 as provided by the act of 1908, practically the first which required him to do anything in return for money paid him.

RANGE FINDERS.

Barr & Stroud range finder.—February 3, 1910, an allotment of $2,000 was made for the purchase of a 12-foot self-contained horizontal base range finder designed by Barr & Stroud for test at Fort Monroe, payment to be made only if the instrument should prove superior to the 9-foot base instruments in service. At the same time $500 was allotted for transportation, installation, and test of the instrument.

Test of the instrument has been completed, and the results obtained with it were of such satisfactory character that it has been recommended the instrument be adopted as the type of its class for our service.

CONCRETE TARGETS.

In the preparation of the plans for the defenses of Manila there developed a need for a form of parapet which would occupy as little space as possible and yet be sufficiently strong to resist the fire of any guns that might be brought against it. On July 17, 1909, the Board made an allotment of $9,000 for construction of parapets with different degrees of reenforcement with a view to developing a parapet suited to the purpose. Further allotments of $722.94 were made for completing the work, and $5,000 was provided November 4, 1909, for ammunition to conduct the firing test. As a result of firings made at these targets, the board, on February 8, 1910, allotted $9,000 more for construction of additional targets and $2,120 for ammunition. An additional allotment of $4,651.45 was made July 7, 1910, for carrying out additional tests. The main tests were completed early this year and the data obtained have been used in the preparation of plans for certain fortifications. A further allotment of $200 was made December 22, 1910, for conducting a test with 6-inch projectiles to obtain penetration data in reenforced concrete.

RANGE AND AZIMUTH TRANSMITTERS.

Burry typewriter telegraph.—April 1, 1909, an allotment of $1,000 was made for the purchase of a set of these instruments, an experimental form of which had shown some promise. It is an instrument designed for the transmission of visible signals to the gun platform to overcome the uncertainties of telephonic communication of range and azimuth directions. After extended tests the Coast Artillery Board found the instrument practicable for transmission over short distances only, and while the instruments on hand will be used, adoption as a type has not been recommended.

Mechanical range transmitter.—April 1, 1909, an allotment of $500 was made for the purchase of material and installation at Fort Monroe of a mechanical range transmitter proposed by the Coast Artillery Board. The device, as its name indicates, is intended for mechanical transmission of data as opposed to the electrical transmission method used in other instruments tested. The plan has, after test, been adopted as a type for installation at heavy gun batteries where the plotting room is located at the battery.

Mechanical transmitter for mortar batteries.—An allotment of $250 was made February 3, 1910, increased by $150 June 2, 1910, for installation of a mechanical transmitter for mortar batteries similar to that for gun batteries, but improved by experience gained in test of the latter. The system has been adopted as a type installation where the plotting room of the mortar battery is centrally located between the two pits.

Barr & Stroud range and azimuth transmitter.—July 26, 1910, the Board made an allotment of $800 for the purchase and delivery at Fort Monroe of a range and azimuth transmitter designed by Barr & Stroud. The instruments have been installed and are undergoin test by the Coast Artillery Board.

Gray type-printing telegraph.—July 7, 1910, the Board made an allotment of $727.50 for the purchase of a type-printing telegraph manufactured by the Gray National Telautograph Co. It has been under going laboratory test by the Coast Artillery Board, but definite conclusion as to its merit has not been reached.

Schepeler dial telegraph.—An allotment of $2,400 was made July 26, 1910, for the purchase and test of the Schepeler dial telegraph. It was installed at Fort Monroe for test, but the multiplicity of conductors, high cost of installation, and impossibility of checking back data make the device undesirable and its adoption has not been recommended.

ARTILLERY DEVICES.

Portable searchlight for field artillery.—October 4, 1906, the Board made an allotment of $6,500 for the development of a portable searchlight for use with the field artillery. On October 3, 1907, the allotment was further increased $4,500 for the same purpose and to cover the expenses of test, including such alterations as the test might show to be desirable.

The development of the outfit met with many difficulties, but it was finally completed and delivered in June, 1910, and was then sent to the maneuver camps at Gettysburg and Pine Plains for practical test under service conditions. An unexpended balance of $1,110.36 from the allotments was revoked on June 2, 1910. The outfit is now in the hands of the Field Artillery Board for tactical test.

Automatic mine anchors.—August 20, 1909, on the recommendation of the Coast Artillery Board, an allotment of $1,500 was made for the purchase of 10 Broomell mine anchors and 10 sets of castings for an anchor design by the Coast Artillery Board for comparative tests. The design proposed by Mr. Broomell was not adopted and this portion of the allotment was revoked, but a satisfactory automatic mine anchor was developed by the Coast Artillery Board.

On July 14, 1909, an allotment of $500 was made for the construction and test of a mine anchor designed by Lieut. Francis B. Wilby, Corps of Engineers, stationed in Manila. Tests were made at that point, but the anchor did not function satisfactorily and has not been adopted.

MISCELLANEOUS.

7½-pounder semiautomatic gun.—On February 2, 1905, the Board made an allotment of $6,000 for the construction of one 7½-pounder semiautomatic gun with long-recoil, broad-tired field carriage and limber, to determine its suitability for use as a mobile coast-defense gun. Program for test of the material was approved April 17, 1906, and it has been under test at intervals since that time. The Chief of Ordnance recently reported that the test had been completed. So far as the mechanical features of this gun are concerned it is suitable for service, but the Board is of opinion that an efficient shrapnel can not be obtained in a projectile weighing materially less than 15 pounds, and adoption of the 7½-pounder has not been recommended.

Mobile artillery targets.—December 1, 1910, the Board made an allotment of $5,000 for experimentation at the Field Artillery School of Fire with the German system of mobile artillery target practice. Work under this allotment is in progress.

Observation cart for field artillery.—November 3, 1910, an allotment of $3,500 was made for the purchase and delivery in New York City of an observation cart for field artillery of the latest design manufactured by Officino Galileo, of Florence, Italy. This device has not yet been received.

Fontanamast.—On March 2, 1911, an allotment was made of $3,500 for the purchase and delivery of a field artillery observing platform, known as the Fontanamast, a German invention. When received it will be tested by the Field Artillery Board.

Roof structures.—August 23, 1910, an allotment of $5,000 was made for conducting a series of firings at various types of roof structures for range-finder stations, with a view to determining the most suitable construction that will avoid or lessen the effect of exploding hostile shells. The design of material for these tests is in the hands of the Engineer Department.

Penetration of mortar projectiles.—The Engineer Department desired to obtain data on the penetration in sand of mortar projectiles, and the Board on March 2, 1911, made an allotment of $456 for construction of the necessary sand butt. April 6, 1911, an additional $114 was allotted for the same purpose.

Hayden panoramic sketching case.—An allotment of $200 was made December 1, 1910, for construction of a panoramic sketching case designed by Lieut. Herbert Hayden, Fourth Field Artillery. A type instrument has been made and is now in the hands of Lieut. Hayden for experimental development.

ESTIMATES FOR THE COMING YEAR.

The Board has this year submitted to the Secretary of War, for transmission to Congress, an estimate for $50,000 to carry on its work for the fiscal year ending June 30, 1913. It is recommended that the appropriation be made in a single amount as heretofore.

It is difficult to estimate accurately in advance for funds for experimental work, the nature of which is largely problematical and the amount required equally so, but the best guide probably is to take the expenditures for a number of years past and make them the basis of estimates for the future. The average allotments for five years have been $56,000. The estimate submitted is therefore less than the average of allotments, but it is hoped will cover necessary requirements.

FINANCIAL STATEMENT.

In compliance with the act of February 24, 1891, which requires "a detailed statement of all contracts, allotments, and expenditures made by the board," an exhibit, marked "Appendix A," accompanies this report, giving a detailed statement of allotments and expenditures from July 1, 1910, to June 30, 1911, the period covered by this report. No contracts were made by the Board during the fiscal year except for rent of office rooms, which is included in the running expenses of the Board.

On July 1, 1910, the Board had on hand $146,955.46, and by the act of March 4, 1911, $25,000 was appropriated. To be added to these is the sum of $6,871.58 revoked from prior allotments, making the total available for the year $178,827.04.

During the year covered by this report the Board made allotments amounting to $44,961.27, leaving a balance June 30, 1911, of $133,865.77 for continuing the work of the Board, of which amount $10,000 is available for a special purpose only, as shown by Appendix A. There is therefore available for general experimental purposes $123,865.77, or about $12,000 less than was on hand a year ago.

LEONARD WOOD,
Major General, Chief of Staff, President of the Board.
WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.
W. H. BIXBY,
Brigadier General, Chief of Engineers.
E. M. WEAVER,
Brigadier General, Chief of Coast Artillery.
E. ST. J. GREBLE,
Colonel, General Staff.
STANLEY D. EMBICK,
Captain, General Staff.
WM. WARNER,
Civilian Member of the Board.
ROBERT R. RALSTON,
Captain, Corps of Engineers, Recorder of the Board.

APPENDIX A.

Table Showing Allotments and Expenditures made by the Board of Ordnance and Fortification from July 1, 1910, to June 30, 1911, Including Statement of Unexpended Balances.

Act of Mar. 2, 1889.[1]

	Balance on hand July 1, 1910		$10,000.00

Act of Aug. 18, 1890.[2]

	Balance on hand July 1, 1910		1,203.61
1910.			
July 26.	Allotment for part payment of Schepeler dial telegraph instruments[3]		1,203.61

Acts of 1892 to 1910, inclusive.

	Balance on hand July 1, 1910	$135,751.85	
	Act of Mar. 4, 1911	25,000.00	160,751.85
	Revocations of allotments under these acts:		
1910.			
July 7.	Nov. 7, 1908, for speaking tubes	245.00	
23.	Aug. 20, 1909, for Broomell mine anchors	825.00	
Oct. 1.	July 27, 1909, and July 7, 1910, for alteration of Bausch, Lomb, Saegmuller range finder	31.00	
1911.			
Jan. 5.	Aug. 20 1909, for test of automatic mine anchors	100.00	
May 4.	Balances from allotments for tests of armor plates	1,800.82	
	Nov. 4, 1909, Feb. 8 and July 7, 1910, for ammunition for tests of concrete parapets	3,869.76	6,871.58
			167,623.43
	Allotments during the year:		
1910.			
July 7.	Labor and material for tests of concrete parapets	4,651.45	
	Gray type-printing telegraph	727.50	
	Alteration of Bausch, Lomb, Saegmuller range finder	30.00	
26.	Purchase and installation of two sets of Barr & Stroud range and azimuth transmitters	800.00	
	Purchase and delivery of one set of Schepeler dial telegraph instruments, part payment	1,196.39	
Aug. 23.	Tests of armor plate	650.00	
	Tests of roof structures for range-finder stations	5,000.00	
Oct. 7.	For firing 500 rounds in tests of means of preventing erosion	750.00	
Nov. 3.	Observation cart for field artillery	3,500.00	
Dec. 1.	Construction of Hayden panoramic sketching case	200.00	
	Test in 6-inch guns of Brown system of preventing erosion in comparison with service method	8,000.00	
	Experimentation with German system of mobile artillery target practice	5,000.00	
22.	Firing test of 6-inch projectiles at concrete parapets	200.00	

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[1] Available for movable submarine torpedoes only.
[2] Available for purchase abroad only.
[3] Balance payable from regular appropriation.

1911.			
Mar. 2.	Purchase and delivery of 40-foot Fontanamast	$3,500.00	
	Sand butt for test of penetration of mortar projectiles	456.00	
Apr. 6.	Additional for sand butt	114.00	
June 1.	Test of means of preventing erosion, deficit	120.92	
30.	Expenses of board for the year	8,861.40	
			$43, 7
	Balance available July 1, 1911		123,

RECAPITULATION.

Balance on hand, act of Mar. 2, 1889	$10,000.00	
Balance on hand, act of Aug. 18, 1890	1,203.61	
Balance on hand and appropriated during the year	160,751.85	
Allotments revoked	6,871.58	
Total available		178, 827.
Allotments during the year		44, 961.
Available for allotment		133, 865.

Statement of appropriations made for experimental work of the Board of Ordnance an Fortification since its organization.

Years.	Amounts.	Remarks.
1888	$505,000	$5,000 for expenses.
1889	231,000	$15,000 for torpedo howitzers;[1] $1,000 for expenses of selection of site for proving ground; $40,000 for counterpoise battery; $50,000 for movable submarine torpedoes; $125,000 for test of experimental guns.
1890	155,000	$100,000 for purchases abroad; $5,000 for expenses; $50,000 for pneumatic gun carriages, segmental guns, and high explosives.
1891	150,000	
1892	210,000	
1893	125,000	$130,000 of amounts appropriated in prior years set aside for Emery gun carriage.
1894	150,000	$50,000 for pneumatic disappearing gun carriage.
1895	100,000	
1896	250,000	$50,000 for Howell carriage; $10,000 for Emery loading apparatus; $40,000 for Gatling cast-steel gun
1897	150,000	
1898	100,000	
1899	100,000	
1900	140,000	$40,000 for Emery carriage.
1901	100,000	
1902	100,000	
1903	140,000	$40,000 for Emery carriage.
1904	100,000	
1905	10,000	
1906	5,000	
1907	25,000	
1908	80,000	$30,000 for Emery carriage.
1909	100,000	
1910	25,000	
1911	25,000	

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[1] This sum was returned to the Treasury in 1903.

APPENDIX B.

Subjects considered.

Subject.	Presented by—
Ammunition for test of concrete parapets	Chief of Ordnance.
Gray typeprinting telegraph	Chief of Coast Artillery.
Alteration of Bausch, Lomb, Saegmuller range finder	Do.
Revocation of allotment for speaking tubes	Chief of Ordnance.
Test of armor plate	Board of Ordnance and Fortification.
Reports of erosion tests	J. H. Brown.
Cei-Rigotti automatic rifle	Georg Grotstuck.
Automatic machine gun	Thomas Reed.
Small arms sight	Christian Williams.
Schepeler dial telegraph	M. A. Abrahamson.
Allotment for Broomell mine anchors revoked	Chief of Coast Artillery.
Purchase of Schepeler dial telegraph	Do.
Purchase of Barr & Stroud range and azimuth transmitter	Do.
Allotment for test of armor plate	Chief of Ordnance.
Allotment for test of roof structures	Chief of Engineers.
Allotment for erosion tests	Chief of Ordnance.
Gun invented by A. David	Michael Droedick.
Air-ship destroyer	W. M. Church.
Projectile for destroying air ships	Harry E. Campbell.
Blunt point projectile	B. C. Borgesen.
Projectile for destroying air ships	S. F. Wilson.
Plan for destroying air ships	T. Ehrenstein.
Magnetic submarine torpedo	W. J. Turnbull.
Artificial stone for fortification	Jasper W. Johnson.
Cannon for aeroplanes	Alfred Day, jr.
Destroying air ships by captive balloons	D. H. Hoffman.
Dirigible torpedo	George S. Schooner.
Firing pin and a gun sight	John J. Murrin.
Depression position finder	Ernest H. Lewis.
Rotating projectile for smoothbore gun	Frank L. Weed.
Winged projectile	J. E. Noak.
Machine gun	Peter A. Dupoza.
Gun mount	H. G. Forrester.
Allotment for observation cart for field artillery	Board of Ordnance and Fortification.
Burry typewriter-telegraph	Chief Signal Officer.
Request for reports on erosion tests	J. H. Brown.
Intrenching tool	A. D. Rusnak.
Projectile for smoothbore gun	A. S. Kirshner.
Gyroscopic projectile	C. R. Welsh.
Tandem torpedo	Alex Klinger.
Allotment for panoramic sketching case	Lieut. Herbert Hayden.
Test in 6-inch guns of means of preventing erosion	J. H. Brown.
Allotment for test of mobile artillery targets	Gen. M. M. Macomb.
Views on new classification of estimates	Board of Ordnance and Fortification.
Projectile invented by Henry Brust	Manke & Co.
Rotating projectile for smoothbore gun	Harry H. Hood.
Turret for guns	Charles W. Waller.
Aeroplane and balloon	Charles Fiesse.
Revocation of allotment for test of mine anchors	Coast Artillery Board.
Allotment for test of concrete parapet	Board of Engineers.
Program for erosion tests in 6-inch guns	Chief of Ordnance.
Asphyxiating projectile	Albert C. Wells.
Projectile with folding blades	Peter Jones.
Incendiary projectile	W. G. Henderson.
Test of portable searchlight	Chief of Engineers.
Program for test of concrete targets	Board of Engineers.
Report of test of mine anchors	Coast Artillery Board.
Additional firings at concrete targets	Board of Engineers.
Compound projectile	J. C. Brinson.
Projectile for destroying balloons	Paul W. Hoffman.
Recoil apparatus for field guns	J. H. Lohmar, attorney.
Torpedo gun and projectile	William M. Douglas.
Telescope for aeroplanists	C. Brown.
Incendiary shell	W. G. Henderson.
Means for repelling attack	Fred Ephraim.
Purchase of Fontanamast	Board of Ordnance and Fortification.

Subjects considered—Continued.

Subject.	Presented by—
Construction of sand butt to test penetration of mortar projectiles.	Chief of Engineers.
Mechanical data transmitter for mortars	Chief of Coast Artillery.
Mechanical range transmitter for guns	Do.
Report of test of automatic mine anchors	Coast Artillery Board.
Test of material targets	Chief of Coast Artillery.
Review of armor plate tests	Col. E. M. Weaver.
Firing naval projectiles at concrete targets	Secretary of Navy.
Aeroplane	Charles Fiesse.
Vibrating muzzle of machine guns	Dennis H. O'Meara.
Torpedo projectile	William M. Douglas.
Projectiles	C. M. Pettey.
Gun construction	William Melburn.
Turrets and armored car	A. McF. McSweeney.
Additional allotment for sand butt	Chief of Ordnance.
Report of test of concrete targets	Board of Engineers.
Report of test of Schepeler dial telegraph	Coast Artillery Board.
"Vodobran"	Ante Milos.
Gun construction	Stanislaus Faber.
Gun for firing at airships	Walter O. Lang.
Pneumatic gun	Watson C. Buck.
Armored car	John J. Kierst.
Bomb-dropping device	Charles Havery.
Aerial torpedo invented by John W. Currell	Hon. R. P. Hobson.
Revolving fort	Erich Stoecher.
Torpedoes with auxiliary heads	Frank D. Warren.
Revocation of allotments for armor plate and concrete parapet tests.	Chief of Ordnance.
Use of plates in concrete parapets for construction of explosion chamber.	Do.
Shell to contain liquid chlorine	Col. F. P. Cobham.
Cobham "aeroplane autoturret ordnance"	Hon. Boies Penrose.
Bomb-dropping device	T. H. Lyons.
Destroying airships	A. M. McFarland.
Field gun and carriage	Frank Wolf.
Projectile with expanding barbs	Peter Jones.
Cartridge case	Adam Loeb.
Increasing power of explosives	John W. Buford.
Report of Brown erosion tests	Chief of Ordnance.
Permanent office of board	Secretary of War.
Allotment for deficit in erosion tests	Chief of Ordnance.
Smoke-producing bomb	Fred E. Jones, jr.
Ground mine	Do.
Aerial gun	Theo. Murdock.
Operating field guns	Charles W. Pratt.
Test of McIntyre aerial torpedo	Hon. W. M. Calder.
Gathmann system of projecting high explosives	Secretary of War.
Test of 7½-pounder semiautomatic gun and mount	Chief of Ordnance.

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62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 193.

ENCOURAGING INDUSTRY AMONG THE INDIANS.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

TRANSMITTING

A REPORT SHOWING THE PROPOSED USE OF THE APPROPRIATION FOR ENCOURAGING INDUSTRY AMONG THE INDIANS DURING THE FISCAL YEAR ENDED JUNE 30, 1911.

DECEMBER 4, 1911.—Referred to the Committee on Expenditures in the Interior Department and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
Washington, December 2, 1911.

SIR: In compliance with the provisions of the act approved March 3, 1911 (36 Stat. L., 1058–1062), I have the honor to transmit herewith a report showing the proposed use of the appropriation for encouraging industry among Indians during the fiscal year ended June 30, 1911.

Respectfully,

WALTER L. FISHER,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

A report as required under the provisions of the act of March 3, 1911 (36 Stat., 1058 to 1062), in which there is appropriated—

> the sum of thirty thousand dollars, or so much thereof as may be necessary, to be immediately available for the purpose of encouraging industry among Indians and to aid them to engage in the culture of fruits, grains, and other crops. The said sum may be used for the purchase of animals, machinery, tools, implements, and other agricultural equipment:
>
> *Provided*, That the sum hereby appropriated shall be expended subject to the conditions to be prescribed by the Secretary of the Interior for its repayment to the United States on or before June thirtieth, nineteen hundred and eighteen, and all repayments of this sum before June thirtieth, nineteen hundred and seventeen, are hereby reappropriated for the same purpose as the original sum, and the entire fund, including such repayments, shall remain

available until June thirtieth, nineteen hundred and seventeen, and all repayments to the fund hereby created which shall be made subsequent to June thirtieth, nineteen hundred and seventeen, shall be covered into the Treasury and shall not be withdrawn or applied except in consequence of a subsequent appropriation made by Act:

Provided further, That the Secretary of the Interior shall submit to Congress annually, on the first Monday in December, a detailed report of the use of this sum.

Regulations governing the expenditure of this money have been formulated and tentative apportionments have been made to the following jurisdictions, where it is thought funds of this class would be helpful to the Indians:

Flathead, Mont	$5,000
Devils Lake, N. Dak	5,000
Yakima, Wash	5,000
Pueblo Albuquerque, N. Mex	2,000
Pueblo Santa Fe, N. Mex	2,000
Fort Mojave, Ariz	2,000
Fort Yuma, Cal	1,000
Malki, Cal	1,000
Martinez, Cal	1,000
Pala, Cal	1,000
Pechanga, Cal	1,000
San Xavier, Ariz	2,000
Soboba, Cal	1,000
Walker River, Nev	1,000
	30,000

The regulations pertaining to the manner of expending this money were approved by the Acting Secretary of the Interior on November 4. Copies of these regulations have been sent to the various jurisdictions to which apportionments have been made, so that the officers in charge might determine whether the local conditions are adaptable to the requirements thereof.

REGULATIONS TO GOVERN THE USE OF THE FUND "INDUSTRY AMONG INDIANS, REIMBURSABLE," APPROVED NOVEMBER 4, 1911.

The act of March 3, 1911 (36 Stats., 1058, 1061), provides:

> There is hereby appropriated the sum of thirty thousand dollars, or so much thereof as may be necessary, to be immediately available, for the purpose of encouraging industry among Indians, and to aid them to engage in the culture of fruits, grains, and other crops. The said sum may be used for the purchase of animals, machinery, tools, implements, and other agricultural equipment: *Provided*, That the sum hereby appropriated shall be expended subject to the conditions to be prescribed by the Secretary of the Interior for its repayment to the United States on or before June thirtieth, nineteen hundred and eighteen, and all repayments to this fund made on or before June thirtieth, nineteen hundred and seventeen, are hereby appropriated for the same purpose as the original fund, and the entire fund, including such repayments, shall remain available until June thirtieth, nineteen hundred and seventeen, and all repayments to the fund hereby created which shall be made subsequent to June thirtieth, nineteen hundred and seventeen, shall be covered into the Treasury and shall not be withdrawn or applied except in consequence of a subsequent appropriation made by law: *Provided further*, That the Secretary of the Interior shall submit to Congress annually on the first Monday in December a detailed report of the use of this fund. * * *

1. The use of this fund shall be limited to such Indians as have not available means with which to undertake self-support and to the general class of articles named in the act. The several superintendents for whose jurisdictions apportionments are made herefrom

should use great care in selections of individuals and families to be thus aided, with a view of encouraging such persons to attempt some industrial undertaking for self-support and to avoid effortless dependence.

2. After determining the articles most needed by any particular Indian the superintendent will submit a separate request for authority in each individual case, reporting all expenditures and savings in the usual manner. The disbursements to be shown on the regular form of purchase voucher. This fund will be used only to aid able-bodied Indians, in amounts not to exceed $600, and to such as desire to personally cultivate their own lands. White men married into the tribe, or Indians known to be addicted to the use of liquor, who will not pay their just and necessary debts when they have means to do so, who are regularly employed by the Government, or by private interests, or who do not live with and care for their families, shall not be entitled to aid from this fund.

3. Before delivering the property thus purchased to the Indian an agreement shall be executed by him, in triplicate, on form ——, one copy to be mailed to the Indian Office, one to be retained in the agency files, and one to be delivered to the Indian. These agreements shall be numbered, beginning with 1 and continuing in order as they shall be executed, and all communications should refer to them by such number. The authority number should be entered where indicated on the blank form. The nature of this agreemnt, the dates and amounts of the several payments, and the fact that such Indian must make arrangements to meet such payments, should be fully and carefully explained and everything done to impress upon him that he will be expected to reimburse the Government honestly and faithfully according to the stipulations contained therein.

4. In case any Indian should default in any payment to be made by him or should not use the property for the purpose of self-support as previously agreed to, or should so neglect to care for it as to materially depreciate its value, the superintendent shall take from such Indian all such property and reissue it to another who may need it or who will agree to put it to proper use. In the event partial payments have been made the superintendent will proceed to value the property thus recovered or have it valued by some competent employee, which value shall be the price charged against the Indian to whom it is subsequently reissued. If the total amount of the partial payments made shall exceed the difference between the original cost and the value set upon the property at the time of its reissue, the difference shall be refunded to the Indian to whom the property was first issued and who made such partial payments. If it is found that the depreciation in value is equal to or greater than the partial payments made, no part of such partial payments shall be refunded but all covered into the fund to be used as provided by the act named above. If a deficiency is created by the depreciation exceeding the partial payments made, the balance should be collected from the Indian, if possible; otherwise charged up as loss. All cases where property is taken away from an Indian must be reported to the office immediately. In case of increase from live stock purchased from this fund, such increase shall be and remain subject to these regulations the same as other property originally purchased from this fund.

5. Where the property, stock, or equipment is delivered to the Indian in the quarter in which purchased, they need not be taken up in the property accounts, provided a certificate of an employee having knowledge of such delivery is attached to the purchase voucher, stating that the articles in question were actually delivered to the Indian named. A reference to the agreement number must be made on each purchase voucher, and a liability card, form ——, showing the name of the Indian, the total consideration, the amount of each payment, the date when same is due, the fund or appropriation used, and the agreement number, must be filled out and forwarded to the Indian Office with each agreement. The liability card when received in the Indian Office shall be verified and initialed by the clerk having charge of the agreements, and sent to Finance Division for use in the examination of the cash accounts of the superintendent.

A schedule in duplicate must be furnished with the quarterly cash accounts, showing all collections during the quarter and giving the names of the Indians, the number of the authority, number of agreement, and number and amount of payment. In case a payment is due during the quarter and not paid, or in case of cancellation of an agreement, a full explanation must be made on the schedule.

6. Collections made by superintendents are not subject to reuse until covered into the Treasury and reapportioned. All such collections shall be taken up as a separate item on the account current under the heading "Miscellaneous receipts" (class II when the articles were purchased from an appropriation and class III when Indian moneys, proceeds of labor, were used), and deposited as frequently as the superintendents' bonds may require, not later, however, than the close of each quarter, and to be covered into the Treasury as proceeds of sales of live stock, implements, etc., purchased from reimbursable appropriations or from Indian moneys, proceeds of labor, whichever may be appropriate.

7. The partial payments to be made by the Indian shall be so regulated as to give him opportunity to meet the same, but in no case shall the time be for more than four years from date of the agreement, or after June 30, 1918.

8. No portion of this fund shall become the basis of speculation by any Indian thus aided; nor shall the property purchased therefrom be sold or transferred prior to full payment therefor except in case of reissue, as set forth above.

9. Appropriations for this purpose shall not be used to meet tribal needs, nor for community needs where there are tribal funds applicable. In unusual and meritorious cases, where no tribal funds exist, community needs may be relieved by two or more individual Indians joining, their aggregate allowance not to be exceeded. In such cases the printed form of agreement shall be changed to meet the requirements.

10. The foregoing regulations shall also apply to and govern the use of similar appropriations and funds where the law will permit.

C. F. Hauke,
Acting Commissioner.

Approved:
Carmi A. Thompson, *Secretary.*
November 4, 1911.

O

62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 215.

ANNUAL REPORT OF FORT LEAVENWORTH AND ALCATRAZ ISLAND PRISONS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

ANNUAL REPORT OF BOARD COVERING FORT LEAVENWORTH AND ALCATRAZ ISLAND PRISONS, TOGETHER WITH COPIES OF REPORTS OF THE COMMANDANT OF THOSE PRISONS, FOR THE FISCAL YEAR ENDED JUNE 30, 1911.

DECEMBER 5, 1911.—Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington, December 4, 1911.

SIR: Pursuant to a provision contained in the sundry civil act approved March 4, 1909, I have the honor to transmit herewith a report of Lieut. Gen. S. B. M. Young, United States Army, retired, president of the Board of Commissioners of the United States Soldiers' Home, dated September 19, 1911, upon the financial and other affairs of the military prison at Fort Leavenworth, Kans., together with copies of reports from the commanding officer of that prison and the commanding officer of the Pacific Branch, United States Military Prison, all for the fiscal year ended June 30, 1911.

Very respectfully,

H. L. STIMSON,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE BOARD OF COMMISSIONERS,
UNITED STATES SOLDIERS' HOME,
WAR DEPARTMENT,
Washington, D. C., September 19, 1911.

SIR: In compliance with that part of the sundry civil act approved March 4, 1909, making appropriation for continuing the reconstruction of the military prison at Fort Leavenworth, Kans., which provides that hereafter the government and control of the prison shall, under the Secretary of War, be vested in the Board of Commissioners of the United States Soldiers' Home and that the president of said board shall submit annually to the Secretary of War, for transmission to Congress, a full statement of the financial and other affairs of the prison, I have the honor to submit the following report for the fiscal year ended June 30, 1911:

No special appropriation by the Congress for the maintenance of the prison at Fort Leavenworth or the branch at Alcatraz Island, Cal., has been made or asked for. The entire expense pertaining to these institutions has been defrayed from the appropriation made for the support of the Army, and their affairs have been administered in the same manner as are those of Army posts.

UNITED STATES MILITARY PRISON, FORT LEAVENWORTH, KANS.

The report of the commandant of the prison shows that the net expenditures for maintenance of convicts for the fiscal year, disbursed from Army appropriation, were as follows:

Quartermaster's Department	$93, 905. 89
Subsistence Department	89, 622. 49
Pay Department	54, 884. 53
Total net expenditures	238, 412. 91

This is the net cost of maintenance of the convicts for the year. Expenditures made for repairs to buildings, sewers, water supply, and other improvements are not included, as they do not enter into the cost of maintaining the convicts.

The monthly average number of convicts in confinement was 918; last year it was 867, and the year before 763.

The value of the labor of the convicts employed in the reconstruction and other work connected with the prison is reported to have amounted to $466,644.20, and the value of the labor of the convicts at the post of Fort Leavenworth, in cutting timber, quarrying stone, building and repairing roads, the work pertaining to the terminal railway system, etc., amounted to $52,954.85, making the total value of the convicts' labor $519,599.05.

The value of the labor is estimated on a basis of a 9½-hour labor day, at rates usually paid in civil life to common laborers, blacksmiths, carpenters, painters, and others for similar work.

The average number of convicts during the year having been 918, and the total value of their labor $519,599, makes the value of each convict's labor $566.01, while the cost of keeping each convict was only $259.70. The value of his labor, therefore, exceeded the cost of his keep by $306.31. Last year the value of each convict's labor was $549.54, and the cost of his keep was $269.59.

The expenditures for reconstruction of the prison are not considered as forming a part of the cost of maintaining the convicts.

The Congress appropriated $583,000 for the reconstruction of the military prison at Fort Leavenworth, the money to be expended so as to give the maximum amount of employment to the inmates of the prison. An appropriation was also made of $60,000 for the construction of a heating and power plant at the prison. The commandant's report shows that satisfactory progress has been made in the construction work, and it is estimated that the prison will be completed within 20 months.

Financial statement up to June 30, 1911.

Reconstruction work:	
Appropriated by Congress	$583,000.00
Expenditures, liabilities, and outstanding accounts	318,543.80
Leaving amount available	264,456.20
Power plant:	
Amount appropriated	60,000.00
Expenditures and liabilities	60,000.00

The care and preservation of the forest of the military reservation at Fort Leavenworth, which was placed by the Secretary of War under the commandant of the prison, has received special attention, and with the labor of convicts excellent work has been done clearing out dead timber, transplanting of trees, etc.; 2,149 cords of wood for fuel were cut and 200,000 feet of lumber; also timber for construction purposes.

The number of convicts in confinement on June 30, 1910, was	898
Received since	562
To be accounted for	1,460
Released by expiration of sentence	504
Released by pardon	26
Released by order	1
Transferred	2
Escaped	8
Died	6
Total	547
Remaining in confinement June 30, 1911	913

Of the convicts in confinement on June 30, 1911, 864 were native born and 49 were foreign born. The health of the convicts during the year was excellent. The percentage on sick report was 2.95.

Religious services were held during the year and were well attended. The Y. M. C. A. conducts a Bible class at the prison.

School was conducted three nights in each week and on each Sunday. The average number of convicts under instruction during the year was 550, and excellent progress was made.

The library consists of 4,142 volumes. Two deliveries of books are made each week to convicts, and are a means of entertainment as well as instruction.

Convicts on release from confinement are furnished a suit of citizens' outer clothing at a cost not exceeding $10 and a donation of $5; also transportation to their homes, or elsewhere, as they may elect, provided the cost in any case is not greater than to the place of the convict's last enlistment.

The prison guard, which is reported as efficient, numbers 165 men. There is also a Hospital Corps detachment of 12 men at the prison.

The officers on duty at the prison are reported as having performed their duties intelligently and efficiently.

The following-named officers were on duty at the prison June 30, 1911:

Lieut. Col. Thomas H. Slavens, Deputy Quartermaster General, commandant.

Maj. William N. Bispham, surgeon.
Maj. Paul A. Wolf, Fourth Infantry.
Capt. Fred L. Munson, United States Infantry.
Chaplain John A. Ferry, Tenth Infantry.
Capt. Frederick W. Van Duyne, quartermaster, United States Army.
Capt. James E. Fechet, United States Cavalry.
First Lieut. Paul M. Goodrich, United States Infantry.
First Lieut. John F. Clapham, United States Infantry.
First Lieut. Goodwin Compton, Thirteenth Infantry.
First Lieut. John M. Hewitt, Medical Reserve Corps.

PACIFIC BRANCH, UNITED STATES MILITARY PRISON, AT ALCATRAZ ISLAND, CAL.

Under the provisions of the act of Congress approved March 2, 1907, the Secretary of War established this branch for the confinement of general prisoners for whom there is no room at the military prison at Fort Leavenworth, Kans., or whom it is impracticable to send there.

The affairs of this branch are administered in the same way and under the same regulations as those at the military prison at Fort Leavenworth.

The sundry civil act approved March 4, 1907, provided for the reconstruction of the military prison at San Francisco Harbor, the cost not to exceed $250,000, and Congress has appropriated that amount for the purpose.

The report of the commandant of the prison for the fiscal year ended June 30, 1911, shows that the net expenditures for the maintenance of convicts for the fiscal year, disbursed from Army appropriations, were as follows:

Quartermaster's Department	$66, 898. 87
Subsistence Department	56, 577. 62
Pay Department	42, 133. 18
Total	165, 609. 67

This is the net cost of maintenance of the convicts for the year. Expenditures made for repairs to buildings, sewers, water supply, roads, etc., are not included as they do not enter into the cost of maintenance of the convicts.

The convicts were usefully employed in the construction work on the prison at Alcatraz Island, and in the construction of public buildings at Angel Island, consisting of barracks, post exchange, administration building, four sets of officers quarters and a guardhouse.

The value of the convicts' labor, which more than equals the cost of their maintenance, is given as follows:

Reconstruction work and other labor at Alcatraz Island	$167, 882. 66
Construction and other work at Angel Island	124, 221. 75
Total	292, 104. 41

The daily average number in confinement was 501; last year it was 375.

The net expenditures show that the cost of keeping each convict was $330.55; last year it was $388.06. The value of the labor of each was $583.04; last year it was $480.89.

Financial statement (reconstruction work).

Appropriated by acts of Congress	$250,000.00
Expended for construction of prison, including skilled labor, etc	191,997.10
Leaving a balance available of	58,002.90

The report of the commandant of the prison shows that good progress has been made in the construction work during the year and that the prison will be completed and ready for occupancy by December next.

The prison guard consists of 155 men, and in addition there is a Hospital Corps detachment of 10 men, 5 men of the Signal Corps, and 2 noncommissioned staff officers.

The number of convicts in confinement on June 30, 1910, was	463
The number of convicts received during the year was	575
Total	1,038
Released by expiration of confinement	459
Pardoned	66
Escaped	1
Died	8
Transferred	1
Total	535
Remaining in confinement June 30, 1911	503

Of the 575 convicts received for confinement, 175 were received from the Philippine Islands. Of the convicts in confinement June 30, 1911, 458 were native born and 45 were foreign born.

Convicts, on release from confinement, are furnished a suit of citizens' outer clothing, at a cost not to exceed $10, and a donation of $5; also transportation to their homes or elsewhere, as they may elect, provided the cost in any case is not greater than to the place of the convict's last enlistment.

The percentage on sick report was 2.32.

Religious services were conducted each Sunday by the post chaplain and by volunteers from San Francisco and vicinity.

In the school instruction was given in reading, writing, spelling, arithmetic, and geography from 6.30 to 7.30 p. m. daily, Saturday, Sunday, and holidays excepted, and the classes consisted of about 20 convicts.

The prison library consists of 240 books, papers, magazines, periodicals, etc., available to all convicts except those undergoing punishment.

The following-named officers were on duty at this branch prison on June 30, 1911, and have performed their respective duties in a satisfactory manner:

Lieut. Col. Reuben B. Turner, commandant.
Maj. Carroll D. Buck, Medical Corps.
Capt. J. C. Castner, quartermaster, United States Army.
Chaplain Timothy P. O'Keefe, Thirteenth Cavalry.
Capt. Henry H. Sheen, quartermaster, United States Army.
First Lieut. Thomas M. Hunter, Twenty-sixth Infantry.
First Lieut. Ballard Lyerly, Fourth Field Artillery.
First Lieut. Thomas C. Cook, Coast Artillery Corps.

Herewith are transmitted full copies of the annual reports of the commandant of the United States military prison at Fort Leavenworth, Kans., and of the Pacific branch thereof at Alcatraz Island, Cal.

Very respectfully,

S. B. M. YOUNG,
Lieutenant General, United States Army, Retired,
President of the Board.

The SECRETARY OF WAR.

ANNUAL REPORT OF LIEUT. COL. THOMAS H. SLAVENS, DEPUTY QUARTERMASTER GENERAL UNITED STATES ARMY, COMMANDANT UNITED STATES MILITARY PRISON, FORT LEAVENWORTH, KANS., 1911.

FORT LEAVENWORTH, KANS., *July 25, 1911.*

The ADJUTANT GENERAL, United States Army,
Washington, D. C.

SIR: I have the honor to submit the following report of the United States military prison for the fiscal year ending June 30, 1911:

QUARTERMASTER'S DEPARTMENT.

Capt. Frederick W. Van Duyne, quartermaster, has performed the duties of prison quartermaster during the entire year.

The following is a detailed statement of the expenditures of public funds made to carry on the regular business of the quartermaster's department during the year:

Maintenance.

Regular supplies:	
Cash expenditures—	
Fuel, forage, straw, mineral oil, printer's supplies, bookbinder's supplies, laundry supplies, tinner's supplies, office supplies, advertising for proposals, subscriptions to newspapers and periodicals, steam cooking kettle, knives, forks, and spoons for convicts' mess, coal fork, repairs (annual) to power house, laundry, heating system, lighting system, and steam cooking apparatus	$30,658.18
Pay of civilian employees	4,981.88
Total	35,640.06
Expenditures of supplies received from depots and other sources—	
Laundry supplies, printing supplies, bookbindery supplies, materials for lighting system, stationery, tableware, incandescent lamps, materials for repairs to heating apparatus and for repairs to mess furniture	1,852.42
Miscellaneous supplies	6.64
Total	1,859.06
Grand total regular supplies	37,499.12
Incidental expenditures:	
Cash expenditures—	
Blacksmith coal, ice for cooling water in offices, postage stamps for convicts' letters, carpet warp, insecticide, office supplies, broommaker's cuffs, long-distance telephone service, reward for apprehending deserter, reward for apprehending escaped convicts, repairs (annual) to bell system	647.16
Extra duty pay for guards	7,472.50
Pay of civilian employees	12,905.67
Donations to convicts at release	2,655.00
Total	23,680.33

Incidental expenditures—Continued.	
Expenditures of supplies received from depots and other sources—	
Blacksmith supplies, materials for repairs to office furniture, horse medicine, materials for repairs to bell system, disinfectants, insecticide, coffins, drawing materials	$590.80
Miscellaneous supplies	9.18
Total	599.98
Grand total incidental expenses	24,280.31
Barracks and quarters:	
Cash expenditures—	
Charcoal, gasoline, padlocks, materials for repairs (annual) to buildings	3,168.74
Labor for repairs (annual) to buildings	392.86
Pay of extra-duty carpenter	182.00
Total barracks and quarters	3,743.60
Military post exchanges: Repairs to building (annual)	79.67
Army transportation:	
Cash expenditures—	
Street-car tickets, blacksmith's coal, materials for crating furniture	295.44
Labor for crating furniture	18.00
Extra-duty pay of overseer and teamsters	258.30
Pay of civilian employees	5,875.99
Total	6,447.73
Expenditures of supplies received from depots and other sources—	
Materials for repairing wagons, for repairing harness, for crating furniture, stable supplies	1,132.75
Miscellaneous supplies	3.18
Transportation for 531 convicts at release	7,409.99
Total	8,545.92
Total Army transportation	15,284.66
Roads, walks, wharves, and drainage:	
Cash expenditures—	
Blacksmith's coal, grass seed, mole traps, fence material, scythes, materials for repairs (annual) to roads, curbing, etc	524.10
Skilled labor for repairs (annual) to roads, curbing, etc	160.00
Total roads, walks, wharves, and drainage	648.10
Waters and sewers:	
Cash expenditures—	
Gasoline, changing exposed sewer, changing location of hydrant, etc., repairs (annual) to pump house, repairs (annual) to water and sewer systems, repairs (annual) to plumbing in buildings	2,714.76
Pay of extra-duty plumber	173.00
Pay of civilian employees	2,797.22
Total	5,684.98
Expenditures of supplies received from depots and other sources—	
Materials for repairs to plumbing and for repairs to machinery, boiler compound, hydroxide for filtering water, pump supplies	761.65
Total water and sewers	6,446.63

Clothing and equipage:	
Cash expenditures—	
Materials for repairing shoes, prison stripe cloth, visors for convicts' winter caps, straw hats, gloves, dye, sewing-machine repairs, band supplies, miscellaneous tailor supplies	$2,281.17
Materials for making civilian clothing for issue to convicts released	3,995.56
	6,276.73
Expenditures of supplies received from depots and other sources—	
Equipage, band supplies, naphthaline	185.83
Total clothing and equipage	6,462.56
Construction and repair of hospital	277.50
Materials for repairs to Hospital Corps sergeant's quarters	89.06
Bringing home remains of officers, soldiers, etc	50.00

New installation and construction.

Regular supplies: Printer's supplies, bookbinder's supplies, school books, moving quarters No. 177–178, street-lighting system	790.42
Incidental expenses: Technical books, draftman's instruments, telephone wire	92.20
Barracks and quarters: Moving stable in rear of quarters 175, moving quarters 178–179, materials for tent floors, window guards for shops	671.24
Army transportation:	
Coal, oil, and waste, for locomotive	291.01
Tools for blacksmith shop	61.50
Total Army transportation	352.51
Roads, walks, wharves, and drainage: Lawn mowers, anvil, material for constructing roads, curbing, etc	2,382.98
Water and sewers: Improving sewage-disposal plant, moving quarters 177–178	335.13
Clothing and equipage: 2 sewing machines	74.70

Clothing, equipage, and cleaning material issued for use of military convicts.

Clothing:	
444 belts, waist	84.36
346 blankets, woolen	858.08
45 boots, rubber, pairs	141.30
1,120 blouses, dyed brown	2,486.40
1,817 drawers, canton flannel	635.95
4,519 drawers, summer	1,174.94
1,340 gloves, pairs	871.00
482 hats, black, campaign	313.30
1,547 mittens, canvas, pairs	293.93
510 mittens, woolen, pairs	153.00
245 overcoats, dyed brown	1,680.70
1,024 overshoes, arctic, pairs	2,672.64
2,854 pajama suits	1,883.64
2,127 shirts, flannel	3,254.31
1,361 shirts, gingham	680.50
806 shirts, khaki	483.60
200 shoes, barrack, pairs	170.00
3,884 shoes, leather, pairs	4,000.52
5,184 stockings, cotton, pairs	414.72
2,685 stockings, woolen, heavy, pairs	644.40
300 stockings, woolen, light, pairs	42.00
570 suspenders	108.30
1,957 trousers, cotton, dyed brown	2,074.42
3,265 trousers, kersey, dyed brown, pairs	5,224.00
2,992 undershirts, cotton	748.00
2,612 undershirts, woolen	2,063.48
	33,157.49

Included in the foregoing is clothing which was received during the year with prisoners sent here for confinement. This clothing was not an expenditure by the prison, and its invoice value ($4,114.98) should be deducted from the foregoing	$4,114.98
Total clothing issued to convicts	29,042.51

It will be noted that all the clothing in the above statement is charged at invoice price. This clothing is almost entirely obsolete clothing which could not be made use of in the Army. It is thought that 50 per cent of this invoice price should be the maximum outlay for this clothing to be charged against the maintenance of the prison, viz $14,521.26.

Equipage and cleaning materials:

647 brushes, scrubbing	$58.23
1,183 soap, scouring, cakes	82.81
622 lye, cans	31.10
475 mops, handled	118.75
Total	290.89
Total clothing, equipage, and cleaning materials issued for use of military convicts	14,812.15

From the foregoing must be deducted the following expenditures for new installation and construction, which do not pertain to the actual maintenance of the prison during the year:

Regular supplies	$790.42
Incidental expenses	92.20
Barracks and quarters	671.24
Army transportation	352.51
Roads, walks, wharves, and drainage	2,382.98
Water and sewers	335.13
Clothing and equipage	74.70
	4,699.18

There are also to be deducted as not being concerned in the maintenance of the prison the following:

Transportation furnished military convicts at release	$7,409.99
Civilian clothing furnished military convicts at release	3,995.56
Donations furnished military convicts at release	2,655.00
	14,060.55

The following funds received from sales of quartermaster property, condemned stores, electric current, and proceeds of laundry must also be deducted:

Sales to officers	$146.89
Sales to enlisted men	376.92
Sale of electric current	20.00
Sale of condemned property and waste products	364.95
Proceeds of laundry work	543.15
	1,451.91

Recapitulation of expenditures by the quartermaster's department for the actual maintenance of the prison.

Regular supplies	$37,499.12
Incidental expenses	21,625.31
Barracks and quarters	3,743.60
Military post exchanges	79.67
Army transportation	7,563.66
Roads, walks, wharves, and drainage	684.10
Water and sewers	6,446.63
Clothing and equipage	2,467.00
Construction and repair of hospitals	277.50

Quarters for hospital stewards	$89.06
Bringing home remains of officers, soldiers, etc	50.00
Clothing, equipage, and cleaning materials for military convicts	14,812.15
Total	95,357.80
Less receipts	1,451.91
Total net outlay of quartermaster's department	93,905.89

Public animals.—On hand July 1, 1910: Horses, 13; mules, 88. Received since by transfer, horses, 1; mules, 11. Total to be accounted for, horses, 14; mules, 99. Sold, horses, 1. Died, mules, 1. On hand June 30, 1911, horses, 13; mules, 98.

Means of transportation.—Carts: 2 sanitary, 3 riding, 7 hand, 4 dump. Wagons: 2 water, 1 truck, 10-ton, 1 sprinkling, 1 rock, 2 passenger, 2 express delivery, 14 escort, 27 dump, 1 army, 1 ambulance, 2 buckboards. Railroad: 1 locomotive, double ender, saddle tank; 2 cars, dump, standard gauge; 2 cars, flat, standard gauge; 48 cars, dump, narrow gauge; 4 cars, push, standard gauge; 1 car, track laying, standard gauge.

Post Quartermaster Sergeant Charles S. Timmons has been on duty at the prison during the entire year. He has performed his duties in a satisfactory manner.

The quartermaster reports that with few exceptions the civilian employees under his direction have performed their duties in a satisfactory manner.

SUBSISTENCE DEPARTMENT.

Capt. Frederick W. Van Duyne, quartermaster, has performed the duties of prison commissary during the entire year.

The following is a statement of the receipts and disbursements of the prison commissary during the year:

Receipts:	
By transfer from officers	$47,900.00
From sales	12,042.46
Total	59,942.46
Disbursements:	
For ration articles	22,571.99
For subsistence property	64.00
For commutation, savings, services	36,838.66
For ice	413.53
Transferred to officers	48.02
Deposited to credit of treasurer of United States	6.26
Total	59,942.46

No balance on hand June 30, 1911.

During the year rations were furnished and commuted as below:

	Rations.	Value.
Post noncommissioned staff	677	$140.83
Hospital corps	3,860	804.75
Prison guard	58,653	12,224.29
Civil employees, quartermaster's department	4,814	1,002.89
Military convicts	323,594	67,424.31
Detachments of guards, etc	268	50.49
Total	391,866	81,647.56
Commuted for sick:		
Enlisted men	1,020	306.00
Military convicts	9,891	2,967.30
Total	10,911	3,273.30

Money value of soap, toilet paper, ice, etc., issued under A. R. 1237	$1,779.09
Toilet supplies issued to military convicts under A. R. 1237	2,777.20
Subsistence property expended and condemned, including stationery, miscellaneous tools, etc	195.83
Total outlay of subsistence department for maintenance of prison	89,622.49
The average cost of the garrison ration was	0.2067

Post Commissary Sergt. William W. Reese has been on duty at the prison during the entire year. His services have been satisfactory.

Prison bakery.—Capt. Frederick W. Van Duyne, quartermaster, prison treasurer, has been in charge of the bakery during the entire fiscal year.

Receipts:	
From sales of bread	$10,322.66
From sales of empty sacks	18.75
Total	10,341.41
Disbursements:	
For purchase of flour	7,979.13
For purchase of yeast	314.00
For purchase of lard, salt, etc	270.34
Returned to organizations (dividends)	1,777.94
Total	10.341.41

No balance on hand June 30, 1911.

3,880.80 pounds of flour were purchased, from which 4,969.80 pounds of bread were sold.

The average price of flour was $0.022358.

MEDICAL DEPARTMENT.

Maj. William N. Bispham, Medical Corps, has performed the duties of prison surgeon during the entire year, except while on leave from August 23 to September 11. On August 30, 1910, First Lieut. John M. Hewitt, Medical Reserve Corps, reported at the prison and was assigned to duty as assistant to the prison surgeon.

Officers and enlisted men.

Number treated:	
Diseases	75
Injuries	8
Venereal	9
Total	92
Transferred to other hospitals:	
Bite of rabid dog	2
Loss of vision, one eye	1
Insanity	1
Total	4
Treated for contagious and infectious diseases:	
Pneumonia	2
Influenza	7
Impetigo	1
Total	10
Operations performed:	
Major	4
Minor	2
Total	6
Average daily number on sick report	3.019
Number of days lost on account of sickness	1,102
Percentage on sick report	1.67
Percentage of deaths	0

Military convicts.

Number treated:	
Diseases	730
Injuries	165
Venereal	25
Malingerers	9
Under observation	11
Total	940
Transferred to other hospitals:	
Insanity	1
Under observation for insanity	1
Total	2
Release from confinement on account of incurable disease (locomotor ataxia)	1
Died:	
Pneumonia	2
Injuries	4
Total	6
Treated for contagious and infectious diseases:	
Influenza	149
Impetigo	2
Pneumonia	11
Mumps	15
Total	177
Operations performed:	
Major	24
Minor	74
Total	98
Average daily number on sick report	27.986
Number of days lost on account of sickness	10,215
Percentage of men on sick report	2.957
Percentage of deaths	.657

Miscellaneous data.

Total number of prescriptions filled for persons not on sick report	16,461
Total number of dressings applied to persons not on sick report	8,912
Inoculated against typhoid fever:	
Officers and enlisted men	69
Convicts	158
Civilians	4
Total	231
Vaccinated against smallpox (enlisted men)	298
Number of men examined for enlistment:	
Enlisted	44
Rejected	3
Total	47
Identification records made:	
Enlisted men	44
Convicts	653
Total	697

Hospital Corps detachment.—The strength of the detachment is 12—1 sergeant, first class; 2 sergeants; 1 acting cook; 5 privates, first class, and 3 privates.

During the year there were four trials by summary court of members of the detachment.

Expenditure of public funds.

Pay of Hospital Corps	$3, 836. 85
Interest on deposits of Hospital Corps	5. 47
Travel pay of Hospital Corps men on discharge	209. 48
Clothing drawn	143. 28
Clothing savings paid on discharge	364. 19
Subsistence of Hospital Corps	831. 64
Total	5, 390. 91
Refunded to United States:	
Court-martial fines	17. 00
Price of purchase of discharge	35. 00
Total	52. 00
Total net outlay for maintenance of prison hospital during the year	5, 338. 91

The cost of drugs, instruments, furniture, bedding, etc., is not known, no invoice prices being furnished by the medical supply depots.

As will be seen from the foregoing, the health of the command during the fiscal year just closed has been excellent. This is due in great measure to the close watch kept on sanitary conditions at the prison.

Chaplain's office.

Chaplain John A. Ferry, Tenth Infantry, prison chaplain. Chaplain Ferry reported at this prison August 10, 1910, and was assigned to duty on that date as prison chaplain, relieving Chaplain Francis B. Doherty, Seventeenth Infantry. In addition to his duties in connection with religious affairs, the chaplain is also censor of the convicts' mail, in charge of prison library, and in charge of schools.

Religious affairs.—During the year four separate services were held each Sunday, and on every other Sunday five services were held, viz, 3 Catholic services, 1 Y. M. C. A. Bible class; 1 Episcopalian. Chaplain Henry Swift, Thirteenth Infantry, has looked after the spiritual interests of men of the Episcopal Church. The Rabbi Liknaitz, of Leavenworth, Kans., has ministered to the members of the Jewish faith during the principal feasts of his church. During the year ministers of various denominations have conducted services for the convicts. All religious services were well attended, and the chaplain states that he has "reason to know there has been great spiritual progress among the military convicts during the past year."

Schools.—Three nights a week and on each Sunday school was conducted for the military convicts. The average number under instruction during the year was 550. The studies embraced elementary subjects, mathematics, phonography, and mechanics. Progress and attendance were marked features of the school year.

Library.—The prison library consists of 3,060 library books, proper; 702 magazines, bound; 380 reports and statistics; 1,533 school books.

Books are furnished convicts twice weekly and newspapers and magazines daily. Since last yearly report 381 additional books have been catalogued, and old magazines and newspapers in bulk have been contributed by interested persons outside of the prison.

Convicts' mail.—During the year the chaplain has read and examined some 32,600 letters and supervised and inspected 42,244 magazines and newspapers.

Miscellaneous.—Six entertainments were given for the convicts during the year by prison talent and two lectures were delivered to them by a public lecturer. Appropriate exercises were conducted by the chaplain on Labor Day and Memorial Day.

There were no expenditures of public funds by the chaplain.

POST NONCOMMISSIONED STAFF.

The detachment consisted of, during the year, one post quartermaster sergeant and one post commissary sergeant.

Expenditure of public funds.

Pay	$1, 608. 00
Clothing drawn	43. 51
Clothing savings paid on discharge	118. 54
Subsistence	151. 00
Total	1, 921. 05

UNITED STATES MILITARY PRISON GUARD.

Officers.—Lieut. Col. Thomas H. Slavens, Deputy Quartermaster General, United States Army, commandant, commanding the guard.

Capt. James E. Fechet, United States Cavalry, commanding second prison company.

First Lieut. Paul E. Goodrich, United States Infantry, commanding first prison company.

First Lieut. John F. Clapham, United States Infantry, on duty with first prison company.

First Lieut. Goodwin Compton, Thirteenth Infantry, on duty with second prison company.

Enlisted men.—The enlisted strength of the guard on June 30, 1911, was as follows:

	Non-commissioned staff.	First company.	Second company.	Total.
Battalion sergeant major	1			1
First sergeants		1	1	2
Quartermaster sergeants		1	1	2
Sergeants		4	4	8
Corporals		6	6	12
Cooks		2	2	4
Musicians		2	2	4
Artificers		1	1	2
Privates		65	65	130
Total	1	82	82	165

During the year four members of the guard deserted. Three of these were apprehended, tried, and are now serving sentence in this prison. There were six trials by general court-martial of members of the guard, and 137 by summary court. There were no trials by garrison court of members of the guard. One of the trials by general court-martial was that of a member of the guard who shot and killed an escaping convict. The guard was charged with manslaughter and was fully and honorably acquitted by the court.

Expenditure of public funds.

Pay, proper	$44,658.83
Pay, extra-duty	8,085.80
Clothing drawn	5,048.98
Clothing savings paid on discharge	5,586.35
Travel pay	1,403.84
Interest on deposits	420.80
Subsistence	12,220.67
Commutation of rations for sick in hospital	306.00
Total expenditures	77,731.27
Refunded to United States:	
Court-martial forfeitures	862.50
Price paid for discharge by purchase	800.00
Total refunded	1,662.50
Total net expenditures for maintenance of prison guard	76,068.77

CONVICT LABOR.

Maj. Paul A. Wolf, Fourth Infantry, executive officer.

For a working day of 9½ hours, common laborers are rated at from $1 to $1.75 per day; tradesmen at from $2 to $3.50 per day; cooks and waiters at from $40 to $50 per month; clerks at from $50 to $100 per month.

	Number of days.	Money value of labor.
Inside the prison.		
Shopmen:		
Bakers	2,520	$5,640.00
Barbers	4,036	8,072.50
Blacksmiths	3,068	5,256.75
Boiler and dynamo tenders	4,335	10,837.00
Butchers	365	730.00
Broom maker	288	864.00
Carpenters	4,032	12,902.60
Electricians	1,440	2,880.00
Filter-plant laborers	1,095	1,369.00
Laundrymen	4,056	7,098.50
Painters	2,016	6,451.00
Printers and bookbinders	1,800	3,960.00
Shoe and harness makers	4.320	9,792.85
Steamfitters and plumbers	2,016	5,040.76
Tailors	4,896	15,912.00
Tinners	1,728	5,184.00
Telephone men	1,080	1,080.00
Wheelwrights	288	821.00
Total	43,379	103,901.46
Office men: Clerks	6,485	10,800.00
Other inside work:		
Caretakers at public quarters	8,030	8,030.00
Carpet makers	864	1,080.00
Clothing storeroom	1,440	1,820.00
Commissary laborers	720	1,060.00
Cooks and waiters	14,760	20,880.75
Hospital attendants	4.320	8,920.00
Orderlies and messengers	17.611	14,920.00
Prison exchange	1,440	2,160.00
Quartermaster storeroom	1,248	1,560.00
Tool room	720	900.00
Total	57,638	72,150.75
Grand total, inside labor	101,017	176,052.21
Outside labor.		
Work performed in connection with the prison:		
New prison	73,164	139,363.23
Prison stables and corral	9,360	13,523.50
Prison farm	2,880	4,307.83
Prison reservation	5,004	6,241.15
Handling sand and cement	1,926	3,568.50
Roads and curbings	3,456	8,590.40
Disposal plant	177	708.65
Transportation detail	1,152	1,593.05
Prison stockade	43,200	86,860.23
Rock quarry	6,864	11,702.50
Public buildings	2,344	9,066.85
Storehouse A	1,728	2,156.10
Handling freight	136	210.00
Burning brick	1,080	2,700.00
Total	152,471	290,591.99
Work performed in connection with the Army service schools and post of Fort Leavenworth:		
Forestry work	3,456	5,865.45
Staff college	312	956.80
Reservation	960	1,465.75
Constructing quartermaster of the post	576	944.00
Policing Grant Avenue	1,152	2,077.00
Roads and curbings	2,016	5,026.00
Railroad system	20,384	36,619.85
Total	28,856	52,954.85
Grand total outside labor	181,327	343,546.84
RECAPITULATION.		
Inside labor	101.017	176,052.21
Outside labor	181,327	343,546.84
Grand total	282,344	519,599.05

PRISON POST EXCHANGE.

First Lieut. John F. Clapham, United States Infantry, has been post exchange officer during the entire year.

The following is a statement of the financial operations of the exchange during the year:

Receipts.

Balance on hand June 30, 1910	$4,122.47
Sales, lunch	698.41
Sales, store	27,407.78
Recreation room	140.65
Other sources	52.50
Final statements	1,932.71
Certificates of deposit	3,500.00
Checks drawn for cash	466.22
Total	38,320.74

Expenditures.

Merchandise	23,970.86
Buildings and repairs	261.48
Operating	1,528.81
Certificates of deposit	3,500.00
Checks drawn for cash	466.22
Post library, etc	46.10
Returned to organizations as dividends	2,145.00
Final statements cashed	1,932.71
Balance on hand	4,469.56
Total	38,320.74

Assets.

Cash on hand	4,469.56
Merchandise on hand	1,847.51
Buildings and fixtures, present value	1,558.45
Bills receivable	1,497.01
Total	9,372.53

Liabilities.

Due on merchandise	1,176.90
Coupons outstanding	26.21
Capital stock	660.00
Balance	7,509.42
Total	9,372.53

MILITARY CONVICTS' MESS.

Capt. Frederick W. Van Duyne, quartermaster, United States Army, in charge.

Receipts and expenditures of the convicts' mess fund were as follows:

Receipts.

Balance on hand July 1, 1910	$2,608.60
Savings in commissary	27,040.44
Dividends from prison bakery	1,680.93
Coffee money saved	3.29
Sales of bones, garbage, etc	301.28
Pro rata share for seeds	217.13
Part payment for books by prison exchange	15.00
Total	31,866.67

Disbursements.

Purchase of bread, groceries, meats, vegetables, etc	$23, 946. 08
Chewing gum and tobacco	2, 815. 38
Garden seeds and implements	583. 73
Books for prison library	142. 87
Ice	70. 56
Miscellaneous tools, instruments, etc	159. 12
Pay of prison farmer	600. 00
Pay of mess steward	176. 00
Pay of assistant mess steward	127. 75
Miscellaneous	23. 00
Total	28, 644. 49
Balance on hand June 30, 1911	3, 222. 18

Seeds to the value of $512.83 have been planted in the prison garden during the year, and vegetables produced, the money value of which is estimated at $2,079.

Recapitulation.—Showing expenditures for the maintenance of the military prison (expenditures for betterments in the way of new construction and installation are not included, as they do not constitute a charge against the maintenance of the prison), and the value to the United States of the convict labor performed during the year.

Quartermaster's department:	
Regular supplies	$37, 499. 12
Incidental expenses	21, 625. 31
Barracks and quarters	3, 743. 60
Military post exchange	79. 67
Army transportation	7, 563. 66
Roads, walks, wharves, and drainage	684. 10
Water and sewers	6, 446. 63
Clothing and equipage	2, 467. 00
Construction and repair of hospitals	277. 50
Quarters for hospital stewards	89. 06
Bringing home remains of officers, soldiers, etc	50. 00
Clothing, equipage, and cleaning material for military convicts	14, 812. 15
Total expenditures	95, 357. 80
Receipts	1, 451. 91
Net expenditures	93, 905. 89
Subsistence department:	
Rations furnished to the value of	81, 597. 07
Rations commuted to the value of	3, 273. 29
Articles issued under A. R. 1237 to the value of	4, 556. 29
Subsistence property expended and condemned	195. 83
Total expenditures	89, 622. 49
Pay Department:	
Pay of post noncommissioned staff	1, 608. 00
Pay of Hospital Corps	3, 836. 85
Pay of United States military prison guard	44, 658. 83
Clothing savings paid at discharge to enlisted men	6, 069. 08
Interests on deposits of enlisted men	426. 27
Total expenditures	56, 599. 03
Refunded to United States:	
Court-martial forfeitures	879. 50
Purchases of discharge	835. 00
Total	1, 714. 50
Net expenditures	54, 884. 53
Actual grand total net expenditures for maintenance of prison:	
Quartermaster's Department	93, 905. 89
Subsistence Department	89, 622. 49
Pay Department	54, 884. 53
	238, 412. 91

Money value of convict labor performed.

In connection with military prison	$466, 644. 20
In connection with Army service schools and the post of Fort Leavenworth	52, 954. 85
Total	519, 599. 05
Total expenditures for actual maintenance of prison	238, 412. 91
Total value of convict labor performed	519, 599. 05

Actual cost of maintenance of convicts only:	
Subsistence	73, 168. 81
Heating	6, 522. 19
Lighting	4, 133. 80
Clothing and equipage	17, 279. 15
Medical attendance	5, 338. 91
Total	106, 442. 86

The total expenditures for the actual maintenance of the prison being $238,412.91 and the average number of convicts confined during the year being 918, the cost of keeping each convict was $259.70.

The total value of the labor of convicts being $519,599.05 and the average number of convicts confined during the year being 918, the value of each convict's labor was $566.01.

It will be noted that the value of each convict's labor exceeded the cost of keeping by $306.31.

OPERATION OF SHOPS AND INDUSTRIES.

During the year the carpenter and paint shop, blacksmith, wheelwright, and machine shop, tin shop, electrician shop, plumbing and steamfitting shop, and carpet-weaving shop were operated at their full capacity.

Tailor shop.—Besides the ordinary work of altering and mending clothing, making caps, gloves, and mittens for convicts' use, the tailor shop has during the year made 531 suits of civilian outer clothing and 169 overcoats for issue to convicts at release. The total cost of making this discharge clothing was $3,995.56, or about $7.52 per man. An overcoat was furnished to each convict discharged during the winter months. Two additional sewing machines were installed in the shop in March, 1911, for use in making flannel shirts for convicts; 1,249 shirts having been manufactured since that date, at a cost of about $1.37½ each.

Harness and shoe shop.—Besides the ordinary work of altering and mending shoes and harness, etc., under instructions from the Quartermaster General of March 23, 1911, the task of cutting down 3,000 pairs of large-size, old-pattern shoes was recently begun in the harness and shoe shop. These shoes are large sizes (10, 11, and 12) that the depots have been overstocked with and unable to issue. They are being cut down to meet the need for smaller sizes. The cost of altering is approximately $0.17 per pair; 337 pairs have already been cut down.

Print shop and bookbindery.—Besides the regular work of printing prison orders and blanks used in the prison administration, 1,500 copies of new prison regulations were printed. The binding included 1,329 books, 50 magazines, 4,568 pads, pamphlets, catalogues, etc.

Broom-making plant.—1,175 corn brooms were manufactured in the broom-making plant for prison use. The broom corn was raised on the prison farm, and the handles, etc., were taken from worn-out brooms and were used in making the new brooms.

In the other shops the current work of the prison was attended to and the work in connection with the construction of the new prison. One cross lock seamer and one cornice brake were installed in the tin shop, and one pipe bending machine was installed in the electrician shop.

Laundry.—Capt. Frederick W. Van Duyne, quartermaster, United States Army, in charge.

The following work has been done in the prison laundry during the year:

Pieces laundered for—	
Officers	11, 442
Hospital	29, 542
Enlisted men and civilian employees	70, 813
Military convicts	629, 134
Total	740, 931

The sum of $543.15 has been collected for work done for officers, enlisted men, and civilian employees, and the money deposited to the credit of the United States Treasurer.

The expenses of the laundry during the year were as follows:

Pay of laundryman	$961.88
Cost of supplies	2,865.45
	3,827.33

Allowing for the work done for hospital and military convicts at 1 cent per piece (the price charged by the Fort Leavenworth post laundry), the cost of laundering the 658,676 pieces would be $6,586.76. Adding to this the amount received from work done for officers, enlisted men, and civilian employees, and deducting the cost of operating expenses, leaves a balance in favor of the United States as shown below:

Work done for convicts and hospital	$6,586.76
Work done for officers, enlisted men, and civilian employees	543.15
Total	7,129.91
Less operating expenses	3,827.33
Savings to the United States	3,302.58

Prison farm.—During the year 78,510 pounds of alfalfa were cut from the farm and baled for future use, making 1,030 bales. Broom corn valued at $300 was raised on the farm. This was used in the manufacture of brooms in the prison broom-making plant for the use of the prison to the value of $364.25. The value of the products of the garden have been mentioned elsewhere.

Alterations in prison population during year ending June 30, 1911.

[Statistics by Capt. Fred L. Munson United States Infantry, adjutant.]

Date	In prison.		Gain.			Loss.						
	Aggregate.	Aggregate, last return.	By commitment.	From escape.	Aggregate.	By expiration.	By pardon.	Escaped.	Transferred.	Died.	Released by order War Department.	Aggregate.
July 31, 1910	899	898	49	0	49	44	2	1	0	1	0	48
Aug. 31, 1910	907	899	59	1	60	48	2	1	0	1	0	52
Sept. 30, 1910	907	907	47	0	47	46	1	0	0	0	0	47
Oct. 31, 1910	922	907	63	0	63	47	0	0	0	1	0	48
Nov. 30, 1910	915	922	41	0	41	45	3	0	0	0	0	48
Dec. 31, 1910	921	915	59	0	59	51	0	1	0	1	0	53
Jan. 31, 1911	927	921	56	1	57	50	0	0	0	1	0	51
Feb. 28, 1911	930	927	47	2	49	43	0	2	0	0	0	42
Mar. 31, 1911	927	930	28	1	29	27	3	1	1	0	0	32
Apr. 30, 1911	940	927	54	0	54	32	8	0	0	1	0	41
May 31, 1911	929	940	30	0	30	37	4	0	0	0	1	42
June 30 1911	913	929	22	2	24	34	3	2	1	0	0	40
Total	11,037	11,022	555	7	562	504	26	8	2	6	1	544

NOTE.—The largest number in confinement at any one time was 963.

RECAPITULATION.

In prison June 30, 1910	898
Received since	562
Total	1,460
Loss:	
Released by expiration	504
Released by pardon	26
Released by order	1
Escaped	8
Transferred	2
Died	6
Total	547
Remaining in prison June 30, 1911	913
Monthly average in confinement	918.08

Organizations to which convicts belonged previous to trial and conviction.

Cavalry.

First Cavalry	4	Tenth Cavalry	9
Second Cavalry	6	Eleventh Cavalry	14
Third Cavalry	13	Twelfth Cavalry	11
Fourth Cavalry	17	Thirteenth Cavalry	7
Fifth Cavalry	6	Fourteenth Cavalry	6
Sixth Cavalry	14	Fifteenth Cavalry	15
Seventh Cavalry	14		
Eighth Cavalry	14	Total	161
Ninth Cavalry	11		

Infantry.

First Infantry	4	Seventeenth Infantry	12
Second Infantry	6	Eighteenth Infantry	4
Third Infantry	3	Nineteenth Infantry	8
Fourth Infantry	2	Twentieth Infantry	3
Fifth Infantry	10	Twenty-first Infantry	8
Sixth Infantry	6	Twenty-second Infantry	2
Seventh Infantry	7	Twenty-third Infantry	5
Eighth Infantry	4	Twenty-fourth Infantry	7
Ninth Infantry	4	Twenty-fifth Infantry	2
Tenth Infantry	17	Twenty-sixth Infantry	13
Eleventh Infantry	18	Twenty-seventh Infantry	15
Twelfth Infantry	5	Twenty-eighth Infantry	10
Thirteenth Infantry	21	Twenty-ninth Infantry	6
Fourteenth Infantry	4	Thirtieth Infantry	2
Fifteenth Infantry	3		
Sixteenth Infantry	8	Total	219

Artillery.

Coast Artillery Corps	180
Field Artillery	108
Total	288

Other organizations.

Engineer Corps	22	General Service Infantry	20
Signal Corps	6	Unassigned recruits	149
United States Marine Corps	1		
Hospital Corps	40	Total	245
Military prison guard	3		
M. A. Detachment	3	Grand total	913
M. S. S. Detachment	1		

Convicts sentenced from the various military departments.

California	1	Lakes	273
Colorado	53	Missouri	213
Columbia	1	North Luzon	1
Cuban pacification	3	Texas	21
Dakota	8	War Department	2
East	270		
Gulf	67	Total	913

Articles of war violated for which tried and number found guilty under them.

17	1	17, 32, 47, 62	1
17, 21, 47, 62	1	17, 33, 60, 62	1
17, 21, 62	1	17, 40, 47	3
17, 32, 33	1	17, 40, 47, 60, 62	1
17, 32, 33, 62	1	17, 40, 47, 62	1

17, 40, 62	1
17, 47	13
17, 47, 50, 51, 62	1
17, 47, 60	1
17, 47, 60, 62	2
17, 47, 62	22
17, 60, 62	1
17, 62	2
20, 21	1
20, 21, 32, 62	1
20, 21, 38	1
20, 21, 62	1
21	3
21, 32, 62	3
21, 33, 62	2
21, 47	1
21, 47, 62	4
21, 62	10
32, 47, 62	5
32, 62	11
33, 47, 51, 62	1
33, 62	1
38, 62	1
39, 62	1
40, 47, 60, 62	2
40, 47, 62	3
47	422
47, 60	7
47, 60, 62	7
47, 62	232
58, 62	1
60	4
60, 62	9
62	124
Total	913

The terms of sentences and number of convicts undergoing confinement under each term.[1]

1 year	74
1 year, 1 month	1
1 year, 4 months	1
1 year, 6 months	35
1 year, 7 months	1
1 year, 10 months	2
1 year, 11 months	1
2 years	210
2 years, 1 month	5
2 years, 1 month, 7 days	1
2 years, 2 months	1
2 years, 3 months	6
2 years, 4 months	4
2 years, 5 months	1
2 years, 6 months	162
2 years, 7 months	4
2 years, 7 months, 10 days	1
2 years, 9 months	9
2 years, 10 months	2
2 years, 10 months, 5 days	1
2 years, 11 months	1
3 years	228
3 years, 14 days	1
3 years, 1 month	9
3 years, 3 months	3
3 years, 4 months	3
3 years, 6 months	10
3 years, 6 months, 7 days	1
3 years, 7 months	3
3 years, 9 months	2
4 years	34
4 years, 18 days	1
4 years, 1 month	1
4 years, 3 months	5
4 years, 4 months	1
4 years, 6 months	9
4 years, 6 months, 5 days	1
4 years, 7 months	2
4 years, 10 months	1
5 years	26
5 years, 1 month	3
5 years, 2 months	1
5 years, 2 months, 15 days	1
5 years, 3 months	1
5 years, 5 months	1
5 years, 6 months	1
5 years, 10 months	1
6 years	9
6 years, 14 days	1
6 years, 1 month	1
6 years, 1 month, 7 days	1
6 years, 2 months	1
6 years, 6 months	2
7 years	6
7 years, 5 months	1
7 years, 6 months	1
8 years	1
9 years	2
9 years, 3 months	1
10 years	7
13 years, 11 months	1
15 years	1
16 years, 3 months	1
17 years	1
21 years	1
21 years, 6 months	1
Total	913

Occupations represented.

Bakers	13
Barbers	28
Bartenders	1
Billposters	3
Blacksmiths	18
Blacksmith's helpers	3
Boiler makers	9
Bookkeepers	4
Box makers	1
Brass workers	1
Bricklayers	5
Brickmakers	1
Brush makers	1
Butchers	6

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[1] Average sentence was 2 years, 10 months, and 6 days.

Cabinetmakers	2
Car builders	1
Carpenters	19
Cement workers	2
Cigar makers	3
Clerks	44
Cooks	41
Coopers	1
Dairymen	3
Designers	1
Draughtsmen	2
Druggists	2
Electricians	19
Engineers	9
Farmers	39
Firemen	69
Florists	3
Harness makers	3
Hatters	4
Horseshoers	4
Hostlers	3
Ironworkers	9
Jewelers	1
Laborers	125
Lathers	1
Laundrymen	5
Linemen	6
Machinists	42
Masons	5
Metal polishers	3
Millers	1
Millwrights	2
Miners	15
Motormen	1
Moulders	10
Musicians	12
Nurses	3
Oilers	2
Packers	1
Painters	62
Paper workers	1
Pattern makers	1
Pearl workers	2
Pipe fitters	2
Plasterers	1
Plumbers	17
Potters	1
Powder makers	1
Pressmen	3
Printers	18
Puddlers	1
Railroad men	12
Ranchers	2
Roofers	3
Saddlers	1
Salesmen	6
School teachers	1
Seamen	4
Sheet-metal workers	2
Shingle inspectors	1
Shirt makers	1
Shoemakers	14
Soldiers	1
Steamfitters	9
Tailors	17
Teamsters	85
Telegraph operators	1
Tinners	5
Tool-dressers	3
Truckmakers	1
Upholsterers	1
Veneer-sorters	1
Waiters	13
Weavers	3
Wireworkers	2
Woodturners	2
Total	913

Nativity of convicts.—Native born, 864; foreign born, 49; total, 913.

Ages of convicts.—Under 21 years, 77; 21 to 25 years, 414; 25 to 30 years, 315; 30 to 35 years, 89; 35 to 40 years, 15; over 40 years, 3; total, 913.

Remissions of sentences.—194 applications for clemency were received at the prison during the year and forwarded to The Adjutant General. The unexecuted portions of the sentences of 26 convicts were remitted, giving them immediate release. In 42 cases parts of the sentences were remitted, still leaving some time to serve.

Discipline.—Disciplinary punishment for violations of prison regulations was inflicted during the year in 12,467 cases.

The most common offense for which convicts were disciplined was "talking and disturbance in ranks." The most common disciplinary punishments were "loss of meal; deprivation of tobacco privilege, and forfeiture of good-conduct time."

Among the convicts there were 9 trials by general court martial, 9 by garrison court, and 88 by summary court. Two of the general court-martial trials were for offenses committed before coming to the prison.

Convicts' money deposits.—On February 27, 1911, these deposits were inspected by Maj. Loyd S. McCormick, inspector general, showing—

Balance to credit of convicts	$2,649.61
Received since that date	1,295.69
Total	3,945.30
Disbursed since that date	1,843.00
Balance on hand June 30, 1911	2,102.30

CARE AND PRESERVATION OF THE FOREST OF THE MILITARY RESERVATION OF FORT LEAVENWORTH, KANS.

The work of clearing out the undergrowth in the forest land, cutting out weeds, removing defective and dead timber was continued throughout the year. The strip of forest land adjacent to the post on the north and west sides, extending from the prison stockade to the Atchison Pike, has been cleared of undergrowth and kept in a neat parklike condition. Also, the strip of timbered land extending from the stockade along the Missouri Pacific Railway, adjacent to the Missouri River, has been cleared of undergrowth, weeds, etc., to the Rock Island junction.

During the year the following timber and wood were cut and gathered from the forest land:

Wood for fuel purposes, cords	2, 149
Poles for construction purposes	1, 183
Poles, miscellaneous	72
Posts for construction purposes	1, 082
Posts, miscellaneous	51
Timbers for construction purposes	5
Lumber, feet, board measure	200, 000

During the year 280 trees were transplanted as shade trees. Three pecks of acorns (black oak) were planted. These were sprouting nicely but the extraordinarily dry season has prevented further growth. Owing to dry weather and many fires there will be little or no seed of any kind this year.

There were 2,123 brush piles burned during the year. There were five forest fires, with an approximate damage of $250.

FORT LEAVENWORTH TERMINAL RAILWAY SYSTEM.

Under the approval of the Secretary of War of April 3, 1911, the Quartermaster General directed on April 6, 1911, the transfer from the constructing quartermaster at Fort Leavenworth to the constructing quartermaster of the prison the completion of the terminal railway system together with all plans, material and equipment, civilian employees, etc. Up to the time of the transfer the prison had supplied all of the common labor for the construction of the terminal system. The work was, however, actively taken over immediately upon the orders for transfer, and the force of civilian employees, teams, etc., greatly reduced. The expenditures attendant on the work now are as small as possible. The work has been carried on as rapidly and economically as conditions would permit, using convict labor to the fullest extent.

When completed the terminal system will consist of, approximately, 6 miles of track, including 15 spurs and one crossover. All track will be laid by September 1, 1911. It will, however, take nearly a year to complete the rock ballast. The entire system, with the exception of one spur, is now open for general traffic.

Track scales, scale house, engine shed, and tool house are under construction, and will be completed in about 30 days. The telephone connections for the system will be located in the scale house and the yardmaster will have his office in that building. A 45-ton engine, double ender, saddle tank, two flat cars, and two dump cars are provided for the repair and maintenance of the system and for handling freight.

ROADS.

Five thousand seven hundred and sixty-three and one-half cubic yards of stone were furnished by the prison for the construction, repair, and maintenance of the post roads. Labor was furnished for grading, spreading rock, and mixing concrete for curbs and gutters. A detail has been kept constantly on Grant Avenue for the care, preservation, and maintenance of that important avenue.

Two thousand four hundred and ninety-one cubic yards of stone were furnished by the prison for construction, repair, and maintenance of prison roads.

A large amount of grading was done on the road approaches to the post quartermaster terminal yard and the prison terminal yard. Grading was also done on some of the reservation roads.

CONSTRUCTION OF NEW PRISON.

The construction of the new prison under acts of Congress approved May 27, 1908, and March 4, 1909, was pushed vigorously throughout the year. The following industries in connection with the construction were carried on:

Rock crushers and quarries.—During the year two rock crushers were operated continuously, stone being supplied from two rock quarries. Under authority of the

War Department, rock was supplied to the authorities of the post of Fort Leavenworth for road making and other purposes. The total output of rock quarries and crushers was as follows:

	Cubic yards.
New prison	7,471½
Prison quartermaster	2,491
Fort Leavenworth	5,763
Total	15,725½

Brick plant.—The brick plant was operated continuously during the year. The output and its consumption are as follows:

Curbing blocks:	
Made during the year	13,580
Consumed	9,533
On hand June 30, 1911	4,047
Bricks:	
On hand June 30, 1910	1,350,000
Made during year	3,169,618
Total	4,519,618
Used in construction	2,692,382
On hand June 30, 1911	1,827,236

Concrete block machines.—The output and its consumption are as follows:

Blocks remaining on hand June 30, 1910	19,151
Blocks made during year	36,325
Blocks used during year	38,568
On hand June 30, 1911	6,937

The blocks made were of the different sizes required for the construction of the new prison.

Sawmill.—142,268 feet board measure of lumber were cut in the sawmill for use in construction purposes.

The wood sawed amounted to 2,141 cords.

Lime kiln.—During the year 21,730 bushels of lime were burned, drawn, and slaked, the stone for which was obtained on the reservation.

Statement of funds received, disbursed, and remaining on hand, of the appropriation "Military Prison, Fort Leavenworth, Kansas," for the period from July 1, 1908, to June 30, 1911.

Amount received	$302,374.38
Amount disbursed and remaining on hand:	
July 1, 1908, to May 31, 1911, material and supplies	226,636.16
July 1, 1908, to May 31, 1911, services	36,621.70
June 1, 1911, to June 30, 1911, material and supplies	3,532.05
June 1, 1911, to June 30, 1911, services	971.70
Remaining on hand June 30, 1911	34,612.77
	302,374.38
Outstanding accounts and liabilities:	
Contract dated Jan. 30, 1911, for Portland cement	1,227.19
Contract dated Apr. 3, 1911, for Missouri River sand	2,920.67
Contracts dated Apr. 17, and 25, 1911, for steam heating material for wings 3, 4, and 5	21,557.61
Contracts dated Apr. 26, 1911, for plumbing fixtures for wings 3, 4, and 5	22,476.72
Proposal dated June 27, 1911, for steel for gratings for wings 3 and 4	2,600.00
Total outstanding accounts and liabilities	50,782.19

Summary.

Expended for material and supplies	$230,168.21
Expended for services	37,593.40
Outstanding accounts and liabilities	50,782.19
Total expenditures, outstanding accounts, etc	318,543.80
Amount appropriated	583,000.00
Expenditures, liabilities, and outstanding accounts	318,543.80
Amount available	264,456.20

Appropriation for power plant.

Amount received	60,000.00
Amount disbursed and contracted for:	
Printing and advertising	492.90
Material and supplies paid for	55,757.00
Material and supplies contracted for	3,750.10
	60,000.00

OFFICE CONSTRUCTING QUARTERMASTER,
UNITED STATES MILITARY PRISON,
Fort Leavenworth, Kans., June 30, 1911.

Construction of new prison, inclosing wall, and power plant.

Buildings.	Total number cubic yards masonry required.	Total number cubic yards masonry in place.	Total number cubic yards masonry required to be completed.	Percentage completed.	Approximate time required to complete (working days).
Prison wall	19,300	18,181	1,119	94.2	30
Power plant	5,000	5,000		100	(1)
Smokestack and breeching	1,015	1,015		100	(1)
Tunnel	272	272		100	(1)
Area way	50	50		100	(1)
Wing No. 3	7,820		7,820		240
Wing No. 4	8,900	3,638	5,262	40.76	210
Wing No. 5	15,600	10,159	5,541	65.12	210
Wing No. 6	8,400		8,400		480
Wing No. 7	7,040		7,040		480
Rotunda	8,448		8,448		480
Entrance	1,900		1,900		480
Masonry, boiler setting	245	245		100	(1)
Engine foundations	617	617		100	(1)
Total	84,607	39,177	45,530		

(1) Completed.

The structural steel is put in place before the masonry work is completed.
The mechanical equipment will be completed approximately at the same time as the construction.

Grading:	Cubic yards.
Total fill required	132,081
Amount filled to date	92,081
Remaining to be filled	40,000
Percentage completed	70.0

The grading will be completed as fast as the construction work will permit.

Officers.

The officers on duty at the prison June 30, 1911, and their duties are:

Lieut. Col. Thomas H. Slavens, Deputy Quartermaster General, commandant, commanding United States military prison guard, and in charge of construction of new prison.

Maj. William N. Bispham, Medical Corps, surgeon.

Maj. Paul A. Wolf, Fourth Infantry, executive officer.

Capt. Fred L. Munson, United States Infantry, adjutant and police officer.

Chaplain John A. Ferry, Tenth Infantry, chaplain, librarian, censor of convicts' mail, and in charge of schools.

Capt. Frederick W. Van Duyne, quartermaster, United States Army, quartermaster, commissary, treasurer, in charge of convicts' mess and mess fund and of prison laundry.

Capt. James E. Fechet, United States Cavalry, summary court officer and commanding second prison company.

First Lieut. Paul M. Goodrich, United States Infantry, in charge of guards' mess and commanding first prison company.

First Lieut. John F. Clapham, United States Infantry, with first prison company, exchange officer, and in charge of guards' laundry and barber shop.

First Lieut. Goodwin Compton, Thirteenth Infantry, with second prison company, ordnance officer and signal officer, and in charge of issues to convicts and of purchases from their deposits.

First Lieut. John M. Hewitt, Medical Reserve Corps, assistant to prison surgeon and recruiting officer.

The entire prison was inspected February 26 to March 2, 1911, by Maj. Loyd S. McCormick, inspector general. On September 15, 1910, and May 24, 1911, the accounts of disbursing officers on duty at the prison were inspected by Lieut. Col. Omar Bundy.

The discipline in the prison guard has been excellent. The work performed by the guard and by the civilian clerks and employees has been very satisfactory.

The officers on duty at the prison have performed their work intelligently, satisfactorily, and harmoniously.

The assistance given by and the cooperation of guards, civilian clerks, and employees and officers on duty at the prison have largely made it possible to accomplish the great amount of work which has been completed during the past fiscal year.

Very respectfully,

THOMAS H. SLAVENS,
Lieut. Col., Deputy Quartermaster General, U. S. A.,
Commandant.

Annual report of the commandant, Pacific branch, United States military prison, Alcatraz, Cal., 1911.

ALCATRAZ, CAL., *July 31, 1911.*

The ADJUTANT GENERAL OF THE ARMY,
Washington, D. C.

SIR: I have the honor to submit the following report of the operations of the Pacific branch, United States military prison, Alcatraz Island, Cal., for the fiscal year ending June 30, 1911.

QUARTERMASTER'S DEPARTMENT.

The following is a detailed statement of expenditures made in the regular conduct of the business of the department during the year:

Regular supplies.

Purchased:	
2,800,000 pounds domestic coal	$10,052.00
57,232 pounds hay, feeding	363.42
12,800 pounds hay, bedding	69.12
16,800 pounds oats	300.72
16,800 pounds barley	221.76
3,200 pounds bran	42.56
19,000 gallons mineral oil	3,360.00
Supplies annual repairs to buildings	50.00
Services nonpersonal:	
Advertising, newspapers	55.00
Repairing typewriting machines	17.00
Newspapers and periodicals	24.90
Services personal: Civilian employees	1,200.00
Supplies received on requisition:	
Class A	2,318.31
Class D	13.56
Total regular supplies	18,088.35

Incidental expenses.

Purchased: 20,000 pounds coal, smithing	$140.00
Services:	
Civilian employees	1,760.00
Enlisted men on extra duty	7,500.00
Donations to military convicts	2,625.00
Supplies received on requisition: Class A	821.89
Total incidental expenses	12,846.89

Barracks and quarters.

Purchased: Material for annual repairs to buildings	1,570.00

Construction and repair of hospitals.

Purchased: Material for repairs to	385.44

Quarters for hospital stewards.

Purchased: For repairs to	51.50

Army transportation.

Services:	
Civilian employees	600.00
Enlisted men on extra duty	1,320.75
Purchased: 4,800 gallons motor gasoline	720.00
Transportation:	
Of military convicts	10,681.13
Enlisted men (guards, etc.)	2,689.00
Sleeping car	530.50
Supplies received on requisition: Class A	1,898.26
Total Army transportation	18,439.64

Clothing and equipage.

Purchased: 525 suits civilian outer clothing for military convicts	5,250.00
Received on requisition: Class A	351.68
Total clothing and equipage	5,601.68

Water and sewers.

Services:	
Civilian employees	1,200.00
Enlisted men on extra duty	127.75
Purchased:	
100 gallons gasoline 86°	37.50
500,000 pounds coal, bituminous	1,675.00
Supplies, annual repairs	17.00
Received on requisition: Class A	944.36
Total water and sewers	4,001.61

Roads, walks, wharves, and drainage.

Services: Enlisted men on extra duty	127.75
Purchased: Class D (cement)	159.00
Total roads, walks, wharves, and drainage	286.75

Clothing and equipage were issued for use of military convicts during the year, as follows:

Articles.	Unit price.	Amount.
1,835 blouses	$2.93	$5,376.55
690 belts, waist	.21	14.49
84 boots, rubber	3.18	277.12
870 drawers, cotton-flannel	.36	313.20
510 drawers, woolen	.61	311.10
545 drawers, jean	.26	16.90
981 hats	.83	814.23
945 mittens, canvas	.19	179.55
272 overcoats	8.59	2,336.48
1,084 shirts, woolen under	.52	563.68
2,081 shirts, dark-blue flannel	1.53	3.183.93
1,237 shoes, barrack	.85	1.051.45
4,555 shoes, calfskin	1.05	4,782.75
370 suspenders	.20	74.00
3,655 trousers, dark-blue	2.65	9,685.75
5,200 stockings, cotton	.08	416.00
Total		29,397.18
Equipage:		
366 corn brooms	.31	123.46
358 brushes, scrubbing	.09	39.68
Total clothing and equipage for convicts		29,560.32

This clothing is issued to military convicts with "no charge." The prices given are taken from invoice. All articles of blue uniform brought here by convicts and deserters' clothing forwarded to the prison by quartermasters of posts in the vicinity were forwarded to designated depots. After dyeing they were returned here for issue. It is believed that 40 per cent only should be charged against the maintenance of the prison, or $11,758.87.

Prison laundry.—A steam laundry was operated by the quartermaster's department during the year and did work for officers, enlisted men, civilian employees, and military convicts. One civilian and seventeen convicts were employed. Operating expenses were as follows:

Pay of foreman	$1,200.00
Supplies	1,204.79
Total	2,404.79

Pieces laundered for—	
Officers and civilian employees	44,767
Enlisted men	99,782
Military convicts	138,580
Hospital	23,455
Total	306,584

At a cost of 2 cents per piece for the laundry of military convicts, which the Government would otherwise have to pay, this would amount to	2,771.60
Value of work done during year for hospital	180.00
Receipts from officers, enlisted men, and civilians	1,668.32
Total	4,619.92
Deduct operating expenses	2,404.79
Balance in favor of United States	2,215.13

Recapitulation.

Regular supplies	18,088.35
Incidental expenses	12,846.89
Barracks and quarters	1,570.00
Construction and repair of hospitals	385.44
Hospital steward's quarters	51.50
Army transportation	18,439.64
Clothing and equipage	5,601.68

Water and sewers	$4,001.61
Roads, walks, wharves, and drainage	286.75
Clothing and equipage issued to military convicts	11,922.01
Total	73,193.87

Statement of public animals and means of transportation belonging to the quartermaster's department, on hand at the prison: Wagons, 5; wagonettes, 2; carts, 7; public animals, 11.

SUBSISTENCE DEPARTMENT.

Commutation paid to enlisted men traveling under orders, returning from furlough, and extra-duty pay		$459.00
Commutation and liquid-coffee money paid to returning guard over military convicts		77.07
Cost of subsistence furnished military convicts		40,034.90
Cost of subsistence furnished enlisted men		12,623.22
Amount paid under A. R. 1234 (enlisted men)		288.40
Amount paid under A. R. 1234 (military convicts)		1,281.27
Subsistence stores—ice, toilet paper, salt, etc., issued under A. R. 1237		1,395.90
Cost of issues under A. R. 1238		1,371.52
Value of ordinary wastage		10.75
Value of wastage of ice		94.55
Subsistence property		59.61
Stationery		35.63
Total		57,731.82
Value of stores taken up	$20.30	
Surplus cash taken up	50.50	70.80
Total outlay of subsistence department for maintenance of military prison		57,661.02
Average cost of one ration ......cents		21.82

MEDICAL DEPARTMENT.

Enlisted men.

Diseases	45
Injuries	9
Venereal	18
Total	72

Transferred to other hospitals	6
Transferred to recruit depot Fort McDowell, Cal., for discharge per S. C. D	2
Died: Drowning	3
Operations performed: Minor	3
Days lost on account of sickness	949
Average daily number on sick report	2.6
Percentage of men on sick report	1.51
Percentage of deaths	1.75

Military convicts.

Diseases	255
Injuries	45
Venereal	25
Total	325

Released:	
Fracture subastragaloid, right foot	1
Pulmonary tuberculosis	1
Adenitis, tuberculosis	1
Pleurisy, tuberculosis	1
Dementia	2
Syphilis, tertiary	1
Total	7

Transferred to other hospitals (including 3 who were later transferred to Government Hospital for the Insane, Washington, D. C.)	5
Died: Lepto-meningitis, acute cerebro-spinal, following chronic mastoiditis, left	1
Operations performed:	
Major	1
Minor	17
Number of days lost on account of sickness	4, 324
Average daily number on sick report	11. 84
Percentage on sick report	2. 32
Percentage of deaths	. 19

Hospital Corps detachment.—The strength of the detachment is 10: Sergeants, first class, 1; sergeants, 2; acting cook, 1; privates, first class, 3; privates, 3.

During the year there was one trial by summary court-martial.

Expenditure of public funds.

Pay of Hospital Corps	$3, 022. 68
Clothing allowance	324. 49
Drugs, appliances, furniture, etc.	863. 19

POST NONCOMMISSIONED STAFF.

Two post commissary sergeants and two post quartermaster sergeants were on duty at prison at different times during the year.

Pay of detachment	$1, 632. 00
Clothing allowance	54. 16
Total	1, 686. 16

DETACHMENT SIGNAL CORPS.

Three corporals, one private, first class, and one private, Company M, Signal Corps, were on duty at prison at different times during the year.

Pay of detachment	$276. 00
Clothing allowance	27. 08
Total	303. 08

UNITED STATES MILITARY PRISON GUARD.

Enlisted strength of guard on June 30, 1911, as follows:

Rank.	Noncommissioned staff.	Third company.	Fourth company.	Total.
Battalion sergeant major	1			1
First sergeants		1	1	2
Quartermaster sergeants		1	1	2
Sergeants		4	4	8
Corporals		6	6	12
Cooks		2	2	4
Musicians		2	2	4
Artificers		1	1	2
Privates		60	60	120
Total	1	77	77	155

During the year there were 2 convictions by general court-martial and 35 convictions by summary court-martial in the third prison company, and 22 convictions by summary court-martial in the fourth prison company.

Pay of the guard.

Battalion sergeant major	$672. 00
Third prison company	18, 347. 19
Fourth prison company	18, 223. 75
Clothing allowance	9, 179. 18
Total	46, 422. 12

The sum of $1,170 was refunded by members of the guard for price of discharge by purchase.

POST EXCHANGE.

Statement of the financial operations of the post exchange for the fiscal year ending June 30, 1911:

Receipts.

Balance June 30, 1910	$108.75
Lunch room	940.00
Stores	2,782.11
Other sources	9,376.42
Total	13,207.28

Expenditures.

Merchandise	9,599.82
Fixtures, etc	207.43
Operating expenses	1,222.75
Dividends	1,680.00
Balance on hand	497.28
Total	13,207.28

Assets.

Cash on hand	497.28
Merchandise on hand	910.77
Fixtures, etc	487.68
Bills receivable	853.70
Total	2,749.43

Liabilities.

Amount due on merchandise	43.50
Bills payable	22.10
Metal checks outstanding	34.95
Present worth	2,648.88
Total	2,749.43

MILITARY CONVICTS.

In confinement June 30, 1910		463
Received from July 1, 1910, to June 30, 1911, classified by departments from which received:		
California	132	
Colorado	11	
Columbia	99	
Dakota	33	
Gulf	12	
Lakes	27	
Luzon	113	
Mindanao	35	
Missouri	45	
Texas	41	
Visayas	27	
		575
Total		1,038

Military convicts received from the departments in the Philippine Islands were transferred to this prison for completion of their terms of confinement.

Loss:		
Expiration of confinement	459	
Pardoned	66	
Died	1	
Transferred	8	
Escaped	1	
Total		535
Remaining in confinement June 30, 1911		503
Remaining in confinement from June 30, 1910		144

Classified according to arm of service from which discharged:

Post noncommissioned staff	1
Engineer Corps	11
Ordnance Corps	2
Signal Corps	4
Hospital Corps	42
Cavalry	236
Field Artillery	113
Coast Artillery Corps	191
Infantry	429
General Service Infantry	5
United States military prison guard	4
Total	1,038

Military convicts remaining in confinement June 30, 1911, classified by regiments, corps, etc., from which discharged.

Engineer Corps	7
Ordnance Corps	1
Signal Corps	3
Hospital Corps	25
First Cavalry	9
Second Cavalry	2
Third Cavalry	13
Fourth Cavalry	7
Fifth Cavalry	12
Sixth Cavalry	14
Seventh Cavalry	4
Eighth Cavalry	8
Ninth Cavalry	5
Tenth Cavalry	3
Eleventh Cavalry	4
Twelfth Cavalry	1
Thirteenth Cavalry	4
Fourteenth Cavalry	13
Unassigned Cavalry	9
Field Artillery	56
Coast Artillery Corps	110
General Service Infantry	4
United States military prison guard	3
First Infantry	16
Second Infantry	1
Third Infantry	11
Fourth Infantry	3
Fifth Infantry	2
Sixth Infantry	7
Seventh Infantry	3
Eighth Infantry	10
Ninth Infantry	4
Tenth Infantry	4
Eleventh Infantry	9
Twelfth Infantry	3
Fourteenth Infantry	7
Fifteenth Infantry	10
Sixteenth Infantry	3
Seventeenth Infantry	4
Eighteenth Infantry	7
Nineteenth Infantry	9
Twentieth Infantry	3
Twenty-first Infantry	1
Twenty-second Infantry	4
Twenty-third Infantry	5
Twenty-fifth Infantry	13
Twenty-sixth Infantry	1
Twenty-seventh Infantry	2
Twenty-eighth Infantry	12
Twenty-ninth Infantry	1
Thirtieth Infantry	13
Unassigned Infantry	18
Total	503

Articles of War violated by convicts received from July 1, 1910, to June 30, 1911, as follows:

16	1
17	39
20	3
21	22
24	1
32	72
33	23
38	9
39	5
40	5
42	1
47	276
51	1
60	21
62	311
Assault	2
Larceny	17
Perjury	1
Robbery	1
Sodomy	1

Articles of War violated by convicts remaining in confinement from June 30, 1910, as follows:

17	7
20	1
21	3
31	1
32	4
39	4
40	1
47	113
60	3
62	65
Larceny	3

Nativity of military convicts remaining in confinement June 30, 1911.

Native born	458
Foreign born	45
Total	503

Occupations of military convicts remaining in confinement June 30, 1911.

Bakers	6
Barbers	3
Bartender	1
Belt maker	1
Blacksmiths	8
Boilermakers	3
Bookbinder	1
Bookkeepers	3
Box maker	1
Brakemen	6
Bricklayer	1
Butchers	4
Carpenters	9
Chauffeur	1
Clerks	10
Civil engineer	1
Cooks	17
Core maker	1
Cowboy	1
Cutler	1
Driller	1
Drivers	4
Drug clerk	1
Electricians	13
Engineers	5
Farmers	42
Firemen	23
Foreman	1
Glassworkers	2
Groom	1
Horseman	1
Horseshoer	1
Inspector	1
Instructor	1
Ironworkers	3
Janitor	1
Jockey	1
Laborers	107
Laundryman	1
Leatherworker	1
Lineman	1
Longshoreman	1
Machinists	8
Masons	2
Mill hand	1
Miners	12
Mixogolist	1
Molders	9
Musicians	7
Nurses	2
Operators	3
Painters	11
Papermaker	1
Plasterers	2
Plater	1
Plumbers	3
Porters	4
Printers	6
Railroad men	4
Reporter	1
Rubber worker	1
Sailors	9
Salesmen	7
Shoemakers	2
Soldiers	49
Spring fitter	1
Steamfitters	2
Stockman	1
Switchman	1
Tailors	3
Teamsters	33
Telegraphers	2
Tool dresser	1
Typewriter	1
Undertaker	1
Upholsterer	1
Waiters	8
Watchmaker	1
Weavers	3
Wood finisher	1
Woodsman	1
Woodworkers	2
Wool spinners	2
Total	503

Convicts received from July 1, 1910, to June 30, 1911, classified according to terms of confinement.

1 month	1
2 months	2
3 months	38
4 months	1
6 months	51
8 months	7
9 months	4
12 months	105
15 months	1
17 months	1
18 months	90
20 months	1
2 years	132
2 years and 5 months	1
2½ years	18
2 years and 7 months	1
2 years and 10 months	1
3 years	74
3½ years	3
4 years	8
4½ years	1
5 years	18
6 years	1
6½ years	1
7 years	6
7 years and 5 months	1
8 years	2
10 years	3
14 years	1
14 years and 10 months	1
Total	575

Final statements.

Sixty-three military convicts released during the fiscal year ending June 30, 1911, were paid on final statements for deposits $3,061.60.

Transportation.

Transportation furnished to military convicts released during the fiscal year ending June 30, 1911	350
Transportation declined	87
Not entitled to transportation	88

Of the total number of military convicts representing the loss for the fiscal year ending June 30, 1911, 10 are accounted for as follows:

Transferred	8
Died	1
Escaped	1

Of the 8 military convicts shown as transferred, 6 were transferred to the general hospital at Presidio, of San Francisco, Cal., one of whom was returned and accounted for amongst military convicts received.

Two were transferred to other posts, one of whom was returned and accounted for amongst military convicts received.

Records of these military convicts show 7 entitled to transportation upon release and 1 not entitled to transportation, he having enlisted at post in San Francisco Bay.

Record of military convict shown as died shows him entitled to transportation upon release.

Record of military convict shown as escaped shows him entitled to transportation upon release.

Convictions of military convicts by summary and general courts-martial.

During the year there was 1 conviction of military convict by general court-martial for offense committed since coming to this prison, and 3 convictions of military convicts for offenses committed before coming to this prison.

Trials of military convicts by summary court-martial, 8.

Clemency.

Five hundred and thirteen applications for clemency were made during the year, and the total number of pardons and remissions of sentences were as follows:

Pardons	66	8 months remitted	1
1 month remitted	3	9 months remitted	4
1½ months remitted	3	1 year remitted	15
2 months remitted	7	1½ years remitted	1
2½ months remitted	2	2 years remitted	1
3 months remitted	16	3 years remitted	1
4 months remitted	4	4 years remitted	1
6 months remitted	32		
7 months remitted	1	Total	158

Convicts' account.

Personal funds belonging to military convicts:

Balance on hand July 1, 1910	$1,453.54
Receipts to June 30, 1911	8,458.20
	9,911.74
Disbursements to June 30, 1911	7,011.00
Balance on hand June 30, 1911	2,900.74
	9,911.74

Mail matter.

Letters, papers, magazines, periodicals, and packages received and forwarded for military convicts during the past fiscal year have been inspected in this office, as required by regulations for the government of the United States military prison and any branch thereof, as follows:

Received:	
Letters	9,910
Papers, magazines, periodicals, and packages	3,645
Forwarded:	
Letters	5,154
Handled during the year	18,709

Prison bakery.

Receipts:	
Sales of bread	$5,344.18
Sales of flour sacks	51.10
Total	5,395.28
Expenditures:	
Supplies for making bread	4,171.40
Labor	281.90
Paid to detachment, Hospital Corps	33.63
Paid to mess, prison guard	519.57
Paid to mess, military convicts	388.78
	5,395.28

Prison school.

During the year the prison school, under charge of the chaplain, with one enlisted man detailed as assistant, has held daily sessions from 6.30 to 7.30 p. m., Saturdays, Sundays, and holidays excepted.

The average number of convicts in attendance has been about 25. The curriculum of studies included reading, spelling, arithmetic, geography, United States history, and letter writing.

Religious services.

From November 11, 1910, religious services have been conducted by the chaplain at Alcatraz and Angel Island, and on alternate Sunday afternoons religious exercises have been conducted by volunteers from San Francisco and vicinity.

Prison library.

The library consists of 240 books, indexed, papers, magazines, periodicals, etc. Reading matter is available inside the stockade to all convicts except those undergoing punishment.

Prison garden.

Owing to no suitable ground there has been no prison garden under cultivation during the year.

Prison mess fund.

Balance on hand July 1, 1910	$3,632.43
Receipts to June 30, 1911	34,608.76
	38,241.19
Expenditures to June 30, 1911	34,449.02
Balance on hand June 30, 1911	3,792.17
	38,241.19

Improvement fund.

Cash on hand July 1, 1910	$1,740.92
Receipts to June 30, 1911	727.03
	2,467.95
Expenditures to June 30, 1911	1,074.23
Balance on hand June 30, 1911	1,393.72
	2,467.95

Labor of military convicts.

Average daily strength		501
Average daily sick in hospital	12	
Average daily sick in quarters	1	
		13
Average daily available for work		488

Alcatraz Island.

INSIDE STOCKADE.

Occupations.	Days worked.	Value per diem.	Amount.
Barbers	612	$2.50	$1,530.00
Bath and lavatory	365	1.75	638.75
Bread man	365	1.50	547.50
Cooks	2,573	2.50	6,432.50
Dishwashers	1,095	1.50	1,642.50
Room orderlies	1,095	1.50	1,642.50
Shoemaker	306	3.00	918.00
Tailor	306	3.00	918.00
Vegetable men	730	1.50	1,095.00
Waiters	1,980	1.50	2,970.00
Painter	306	3.00	918.00
Yard orderly	365	1.50	547.50
Clothing-room man	365	1.50	547.50
Total			20,347.75

OUTSIDE STOCKADE.

Occupations.	Days worked.	Value per diem.	Amount.
Bakers	1,813	$3.00	$5,439.00
Blacksmith	306	3.50	1,071.00
Blacksmith's helper	306	2.50	765.00
Carpenters	612	3.50	2,142.00
Clerk	365	2.50	912.50
Dockmen	2,190	2.00	4,380.00
Engineers, pump	800	3.50	2,800.00
Laborers	12,790	1.75	22,382.50
Lamplighter	365	2.00	730.00
Laundrymen	5,178	2.00	10,356.00
Messengers	1,825	1.75	3,193.75
Painters	1,224	3.00	3,672.00
Plumber	306	3.50	1,071.00
Plumbers' helpers	612	2.50	1,530.00
Printers	346	3.00	1,038.00
Police party	1,460	2.00	2,920.00
Teamsters	1,460	2.50	3,650.00
Total			68,052.75

NOTE.—In the shops at Alcatraz there was done all the work of pipe cutting, threading, and fitting required in plumbing and installation of heating apparatus, and laying of 8-inch fresh-water mains at recruit depot and Fort McDowell, Cal. The value of this labor is included in the foregoing total.

Construction.

During the year there was carried on construction of new prison, shops, boiler and engine house, smokestack and other branches of work incidental to construction, and laying of an 8-inch fresh-water line from wharf to reservoirs.

Based on contract prices for similar work in this vicinity, the cost of work during the year would have been as follows:

New prison		$149,048.22
Shops		7,923.78
Boiler and engine house		9,022.00
Smokestack		2,042.50
8-inch pipe line		3,819.35
Total		171,855.85
Expended for material and labor:		
Appropriation military prison, San Francisco, Cal	$76,387.47	
Appropriation barracks and quarters	3,699.23	
Appropriation regular supplies	7,380.00	
Appropriation water and sewers	9,679.35	
	97,146.05	
Value of stone, brick, and sand used	6,417.00	
		103,563.05
Value of prison labor		68,292.80

The shops and boiler and engine house are practically completed, and smokestack is entirely completed.

Equipment.

Informal contract was made for furnishing the material and skilled labor required in installing pumping machinery, heating and electric lighting apparatus in pump house and boiler and engine house.

The contract price is $27,660, military convicts performing the labor under direction of skilled erectors furnished by the contractors. The work is rapidly nearing completion.

The value of labor so performed is $5,049.

Grading at north end of island.

1,556 cubic yards earth excavated, at 31 cents	$482.36
1,437 cubic yards rock excavated, at $1.50	2,155.50
	2,637.86

Handling freight.

Details of convicts were sent at different times, under charge of a guard, to the United States transport dock, San Francisco, to load on Government vessels building materials, supplies, etc. They performed 1,401 days labor, at a value of $3,502.50.

Value of convict labor at Alcatraz.

Inside stockade	$20,347.75
Outside stockade	68,052.75
Construction	68,292.80
Installing equipment	5,049.00
Grading	2,637.86
Hauling freight	3,502.50
Total	167,882.66

ANGEL ISLAND.

During the year a permanent detail of convicts, with an average strength of 202, remained on Angel Island. A detail averaging 60 was sent daily from Alcatraz, Sundays and holidays excepted. They were employed in the construction of public buildings, the usual operations of a stone quarry, delivering sand, grading, construction of water and sewer system, wrecking and moving old buildings, etc., and in addition performed 7,885 days' labor under the direction of the commanding officer, Fort McDowell.

Construction.

Post exchange (completed): Value of prison labor	$2,769.30
Administration building (completed):	
Value of prison labor	3,790.98
Deduct value of labor performed fiscal year 1910	157.48
	3,633.50
Two sets field officers' quarters (completed):	
First set—Value of prison labor	7,310.70
Second set (extra foundation)—Value of prison labor	7,565.70
	14,876.40
Two four-set officers' quarters:	
First set (95 per cent completed)—Value of prison labor	16,187.70
Second set (60 per cent completed)—Value of prison labor	10,223.80
	26,411.50
Guardhouse (grading only, rock and earth excavation): Value of prison labor	1,337.40
Barrack for 800 men (70 per cent completed): Value of prison labor	26,128.15
Hospital (20 per cent completed):	
Value of prison labor, construction	6,599.50
Value of prison labor, grading	2,200.00
	8,799.50
Water system: Construction of 8-inch line from wharf to tanks, and connections to buildings—Value of prison labor	1,665.75
Sewer system: Connections from buildings to mains—Value of prison labor	580.00
Drainage system: Value of prison labor	876.00
Grading: Value of prison labor	1,508.00
Developing wells: Value of prison labor	3,437.75
Moving and wrecking buildings: Value of prison labor	750.00
Water system: Construction of 8-inch pipe line at Fort McDowell, Cal.—Value of prison labor	642.50

Quarry.

CRUSHED STONE.

Where delivered.	Cubic yards.	Value per cubic yard.	Amount.
Alcatraz Island	3,300	$1.25	$4,125.00
Fort McDowell	1,735	1.25	2,168.75
Recruit depot	4,900	1.25	6,125.00
Total	9,935		12,418.75
Value of prison labor for operating quarry			8,941.50

SAND.

Alcatraz Island	1,200	$0.30	$360.00
Recruit depot	3,584	.50	1,792.00
Value of prison labor			2,152.00

Fort McDowell.

Value of prison labor, 7,885 days at $2.50 per day	$19,712.50
Recapitulation:	
Construction	83,955.75
Water system	1,665.75
Sewer system	580.00
Drainage system	876.00
Grading	1,508.00
Developing wells	3,437.75

Recapitulation—Continued.

Moving and wrecking buildings	$750.00
Water system, Fort McDowell	642.50
Operating stone quarry	8,941.50
Delivering sand	2,152.00
Labor under direction of commanding officer, Fort McDowell	19,712.50
Total	124,221.75

Recapitulation—Statement of funds received and expended.

Appropriation.	Received.	Expended.	Balance.
Regular supplies	$8,747.13	$7,129.90	$1,617.23
Barracks and quarters	41,043.54	41,043.35	.19
Military post exchanges	616.98	616.76	.22
Water and sewers	19,040.20	19,038.90	1.30
Construction and repair of hospitals	50,000.00	26,191.48	23,808.52
Military posts	66,942.43	33,843.45	28,118.98
	186,390.28	127,863.84	53,546.44
Deposited credit Treasurer of United States			.41
Total available balance			53,546.03

Balances required to pay outstanding indebtedness.

Electric lighting system.

Contract was made for all the materials necessary for an electric lighting system and deliveries commenced; work to be done by prisoner's labor; contract price of materials, $22,330.55.

GENERAL RECAPITULATION.

Value of prison labor.

Alcatraz Island	$167,882.66
Angel Island	124,221.75
	292,104.41
Average daily number of prisoners working	488
Value of each convict's labor	$598.57

Disbursements by departments.

Quartermaster's department	$73,193.87
Deduct the amount expended for repairs to buildings, water and sewer systems, roads, walks, wharves, etc., which do not enter into the cost of maintenance of convicts and the cost of transportation furnished military convicts on their release from prison, cost of civilian outer clothing furnished, and donations made	28,678.33
	44,515.54
Subsistence department	57,661.02
Pay department	42,133.62
Total expenditures for maintenance of convicts	144,310.18
Average daily number in confinement	105
Average cost of maintaining each convict	$288.04

RECONSTRUCTION MILITARY PRISON.

For this purpose $250,000 have been appropriated as follows:

Act of Congress approved Mar. 4, 1907 (G. O. No. 68, War Department, Mar. 29, 1907)		$50,000.00
Act of Congress approved May 27, 1908 (G. O. No. 100, War Department, June 16, 1908)		100,000.00
Act of Congress approved Mar. 4, 1909 (G. O. No. 63, War Department, Mar. 30, 1909)		100,000.00
To include June 30, 1911, there had been expended		191,997.10
For improvement and operation of stone quarry at Angel Island, Cal		2,840.56
For machinery, supplies, tools, and skilled labor in erecting inclined railway at Alcatraz Island, Cal		5,246.24
Material	$5,006.24	
Labor	240.00	

For construction:		
Material	$130,584.19	
Material and skilled labor	33,510.44	
Labor	19,815.67	
		$183,910.30
Total amount supplied		200,000.00
Total amount expended		191,997.10
Balance on hand June 30, 1911		8,002.90
Balance in Treasury		50,000.00
Balance		58,002.90
Outstanding indebtedness		15,420.00
Balance available June 30, 1911		42,582.90

The construction proper of the building, except finish painting and putting on finish hardware, is completed; installation of plumbing fixtures is in progress; this branch of the work delayed by nonreceipt of fixtures, a large number having been broken in transit, due to wreck of freight train; electric roughing-in completed and building wired and ready for electric fixtures, which have been ordered; steam heating completed and ready for testing; steam cooking apparatus in place and ready for connections to steam lines.

It is believed the entire building will be completed and ready for occupancy by December 31, 1911.

OFFICERS.

The following officers were on duty at the prison during the fiscal year:

Lieut. Col. Reuben B. Turner, Infantry, commandant and in charge of construction; also in charge of construction at recruit depot, Angel Island, Cal.

Maj. Carroll D. Buck, Medical Corps, post surgeon and recruiting officer.

Capt. J. C. Castner, quartermaster, United States Army, quartermaster.

First Lieut. Jens E. Stedje, Fourth Cavalry, commissary, executive officer, and post treasurer.

First Lieut. Walter Harvey, Twenty-second Infantry, post adjutant, commanding fourth prison company, summary court, signal officer, athletic officer, and post librarian.

First Lieut. Benjamin B. Warriner, Medical Reserve Corps, assistant to post surgeon, exchange officer.

The following officers served during the year as indicated after their respective names:

Chaplain Timothy P. O'Keefe, Thirteenth Cavalry, post chaplain, in charge of school for military convicts. Reported for duty November 11, 1910.

Capt. Henry H. Sheen, quartermaster, United States Army, quartermaster, engineer, police, and ordnance officer. Reported for duty July 18, 1910.

Capt. Kensey J. Hampton, quartermaster, United States Army, quartermaster, engineer, police, and ordnance officer. Relieved from duty at prison July 27, 1910.

First Lieut. Thomas M. Hunter, Twenty-sixth Infantry, commanding third prison company. Reported for duty March 22, 1911.

First Lieut. Ballard Lyerly, Fourth Field Artillery, on duty with third prison company, in charge of general mess. Reported for duty October 25, 1910.

First Lieut. Allen Kimberly, Coast Artillery Corps, exchange officer, in charge of school for military convicts and general mess. Relieved from duty at prison November 15, 1910.

First Lieut. Maynard A. Wells, Seventeenth Infantry, post treasurer, summary court, commissary and executive officer. Relieved from duty at prison October 27, 1910.

First Lieut. Thomas C. Cook, Coast Artillery Corps, on duty with fourth prison company, in charge of mail for military convicts. Reported for duty December 7, 1910.

First Lieut. William C. Russell, Eleventh Infantry, post laundry officer. Relieved from duty at prison March 29, 1911.

With a few exceptions all officers, enlisted men, and civilian employees have performed their duties in a satisfactory manner.

Very respectfully,

R. B. TURNER,
Lieutenant Colonel of Infantry, Commandant.

Official:

WALTER HARVEY,
First Lieutenant, Twenty-second Infantry, Adjutant.

62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 216.

COST OF GUNS MANUFACTURED BY THE GOVERNMENT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

STATEMENTS SHOWING THE COST OF ALL TYPE AND EXPERIMENTAL MANUFACTURE OF GUNS AND OTHER ARTICLES AND THE AVERAGE COST OF THE SEVERAL CLASSES OF GUNS AND OTHER ARTICLES MANUFACTURED BY THE GOVERNMENT DURING THE FISCAL YEAR ENDED JUNE 30, 1911.

DECEMBER 5, 1911.—Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington, December 4, 1911.

SIR: I have the honor to transmit herewith a letter from the Chief of Ordnance, United States Army, dated 24th ultimo, submitting, in accordance with the requirements of the act of Congress approved August 18, 1890, statements of the cost of all type and experimental manufacture of guns and other articles and the average cost of the several classes of guns and other articles manufactured by the Government during the fiscal year ended June 30, 1911.

Very respectfully,

H. L. STIMSON,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, November 24, 1911.

The honorable the SECRETARY OF WAR.

SIR: In accordance with the requirements of the act approved August 18, 1890, I have the honor to transmit herewith, for the information of Congress, statements of the cost of all type and experimental manufacture of guns and other articles and the average cost of the several classes of guns and other articles manufactured by the Government during the fiscal year ended June 30, 1911.

Respectfully,

WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1.		
	Accessories, etc., for 8-inch, 10-inch, 12-inch, and 14-inch guns.		
20	Covers, breech, 8-inch gun, model of 1888, on D. C	$7.32	$146.40
21	Covers, muzzle, for 8-inch rifle, model of 1888	3.31	69.51
1	Cover for 3-inch objective telescopic sight on 10-inch D. C., model of 1894 MI, olive drab	3.22	3.22
41	Covers, breech, 10-inch gun, model of 1888, on D. C	8.64	354.24
5	Covers, breech, for 10-inch gun, model of 1900, on D. C	8.13	40.65
1	Cover, model breech, for 10-inch gun		12.85
20	Covers, muzzle, for 10-inch gun, model of 1888	3.50	70.00
1	Sight, breech bore, for 10-inch gun, model of 1895 MI		4.26
20	Covers for 3-inch objective telescopic sight, model of 1904, on 12-inch D. C., model of 1896, 1897, and 1901	6.66	133.20
1	Cover, model breech, for 12-inch gun		13.61
8	Covers, breech, 12-inch gun, model of 1888, on B. C	9.12	72.96
12	Covers, breech, 12-inch gun, model of 1895, on D. C	9.62	115.44
8	Covers, muzzle, for 12-inch gun, model of 1888	3.78	30.24
5	Covers, muzzle, for 12-inch gun, model of 1895	3.79	18.95
7	Covers, tompion and muzzle, for 12-inch gun, model of 1900	7.19	50.33
5	Paulins for 12-inch gun on D. C., models of 1897 and 1901	192.99	964.95
1	Sight, breech bore, for 12-inch gun, model of 1895 MI		4.32
1	Sight, breech bore, for 12-inch gun, model of 1900		4.32
7	Covers, muzzle, for 14-inch gun, model of 1907	4.12	28.84
1	Cover for 3-inch objective telescopic sight on 14-inch D. C., model of 1907, olive drab		3.34
100	Lanyards for seacoast guns	.91	91.00
	PART 1, CLASS 1, SECTION 2.		
	Accessories, etc., for rapid-fire guns.		
4	Cases, carrying, for 2-inch telescopic sights, model of 1906	13.52	54.08
4	Covers for observation telescopes, seacoast, model of 1908	2.50	10.00
20	Covers for 3-inch objective telescopic sight, model of 1904	5.13	102.60
10	Covers, muzzle, for 6-pounder gun	.71	7.10
10	Covers for 2-inch telescopic sight, model of 1906, for 15-pounder B. C., model of 1903	1.76	17.60
50	Covers, breech, for 15-pounder R. F. gun, models of 1898, 1902, and 1903.	3.13	156.50
10	Covers, range drum, for 15-pounder R. F., B. C., model of 1903	1.82	18.20
30	Covers, tompion and muzzle, for 15-pounder R. F. gun, models of 1898, 1902, and 1903	1.27	38.10
1	Paulin for 15-pounder R. F. gun, model of 1898, P. M		13.90
8	Paulins for 3-inch (15-pounder) gun, model of 1902, B. C	23.87	190.96
4	Pouches, sight, for telescopic sight, model of 1899, for 15-pounder R. F. gun, model of 1898	9.91	39.64
4	Sights, breech bore, for 3-inch (15-pounder) gun, model of 1903	3.27	13.08
1	Sight, breech bore, for 15-pounder gun, D. S. Manufacturing Co., model of 1898		3.27
1	Sight, muzzle bore, complete, for 15-pounder gun, model of 1898		1.36
1	Sight, muzzle bore, complete, for 15-pounder gun, model of 1902		1.36
1	Sight, muzzle bore, complete, for 15-pounder gun, model of 1903		1.36
1	Sight, bore, set, for 15-pounder R. F. gun		3.99
3	Covers, breech, for 4-inch R. F. gun, D. S	2.70	8.10
10	Covers, breech, for 4.72-inch gun, R. F., Armstrong	3.74	37.40
10	Covers, breech, 5-inch R. F. gun, model of 1897	2.81	28.10
15	Covers, tompion and muzzle, for 5-inch R. F. gun, model of 1897	2.71	40.65
5	Covers, tompion and muzzle, for 5-inch R. F. gun, model of 1900	2.78	13.90
1	Sight, breech bore, for 5-inch R. F. gun, model of 1900		3.50
10	Covers, breech, for 6-inch R. F. gun, model of 1897, on D. C	3.36	33.60
5	Covers, breech, for 6-inch R. F. gun, model of 1900, on B. C	8.88	44.40
20	Covers, breech, for 6-inch R. F. gun, models of 1900, 1903, and 1905, on D. C	7.08	141.60
8	Covers, breech, for 6-inch R. F. gun, model of 1908	5.43	43.44

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued.		
	Accessories, etc., for rapid-fire guns—Continued.		
10	Covers, tompion and muzzle, for 6-inch R. F. gun, model of 1897	$3.15	$31.50
20	Covers, tompion and muzzle, for 6-inch R. F. gun, models of 1900, 1903, and 1905	2.91	58.20
4	Covers, tompion and muzzle, for 6-inch R. F. gun, model of 1908	2.86	11.44
10	Lanyards, 6-inch gun	.91	9.10
1	Sight, breech bore, for 6-inch gun, model of 1900		3.65
1	Sight, breech bore, for 6-inch gun, model of 1903		3.65
1	Sight, breech bore, for 6-inch gun, model of 1905		1.36
	PART 1, CLASS 1, SECTION 3.		
	Accessories, etc., for mortars.		
30	Covers, breech, for 12-inch mortar, models of 1886 and 1890, steel	5.87	176.10
1	Sight, breech bore, for 12-inch mortar, model of 1890 MI		4.22
70	Lanyards for seacoast mortar	.91	63.70
	PART 1, CLASS 1, SECTION 6.		
	Accessories, etc., for 3-inch B. L. saluting gun.		
100	Covers, breech	3.05	305.00
1	Head, sponge, with carpet cover		1.96
1	Head, sponge, wood		.44
1	Ring, spring detent, for securing trigger shaft		3.90
50	Tompions	1.13	56.50
	PART 1, CLASS 2, SECTION 1.		
	Articles for fire control of artillery of position.		
1	Case for azimuth instruments, model of 1910		19.01
3	Cases, leather, for ground rods	1.50	4.50
1	Case, leather, for plotting instrument		20.73
10	Chests for fire-control instruments	36.51	365.10
10	Covers, canvas, for azimuth instruments, model of 1910	.54	5.40
5	Covers, canvas, for Lewis depression position finder, type A	3.41	17.05
66	Covers for Swasey depression position finders, type A, A-1, and A-11	4.01	264.66
7	Covers for Warner & Swasey azimuth instruments, model of 1900	.54	3.78
	PART 1, CLASS 2, SECTION 6		
	For dummy cartridges.		
30	Covers for dummy cartridges for 8-inch gun	2.44	73.20
60	Covers for dummy cartridges for 12-inch mortar	1.25	75.00
16	Covers, canvas (sections), for dummy cartridges for 12-inch gun, model of 1900, olive drab	19.49	311.84
12	Heads, extractor, for dummy cartridges	2.25	27.00
138	Sections, wood, for dummy cartridges	.59	81.42
34	Layers of wood for dummy cartridges	.74	25.16
	PART 1, CLASS 3, SECTION 6.		
	Ammunition for artillery of position.		
2,000	Cases, cartridge storage, model of 1901, for 10-inch guns, models of 1888, 1896, and 1900	3.74	7,480.00
156	Cases, cartridge storage, model of 1901 for 6-inch guns, models of 1900, 1903, and 1905	2.02	315.12
506	Handles, complete with reenforce plates, for repair of zinc cartridge storage cases for mortar charges	.35	177.10
117	Strips, sealing, for repair of zinc cartridge storage cases for mortar charges	.04	4.68
	PART 1, CLASS 4, SECTION 1.		
	Parts common to pack outfits.		
181	Blinders, model of 1910	2.46	445.26
292	Bodies, aparejo	26.67	7,787.64
331	Halter bridles	7.02	2,323.62
313	Cinchas, aparejo	4.05	1,267.65
28	Cinchas, belly	2.32	64.96
6	Cinchas, load	3.92	23.52
416	Coronas	4.28	1,780.48
304	Cruppers	9.19	2,793.76
315	Sobrejalmas	4.74	1,493.10

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 1—Continued.		
	For pack outfit, automatic machine rifle, caliber .30, model of 1909.		
6	Cases, barrel	$8.67	$52.02
4	Cases, gun, sole leather, with leather pockets	31.23	124.92
2	Cases for spare parts	11.68	23.36
1	Case, loading tool		6.03
4	Covers, sponge	.25	1.00
6	Frames, pack, with latigo straps	24.51	147.06
8	Frames, super, with latigo straps	5.80	46.40
8	Hangers, ammunition	7.25	58.00
4	Hangers, gun, with latigo straps	11.45	45.80
8	Mittens, gunner's pairs	2.64	21.12
1	Paulin, large		11.27
2	Pins, picket, and picket-pin eyes	3.96	7.92
4	Pouches, gunner's, for tools	2.08	8.32
1	Rope, paulin, ⅜ inch by 40 feet		.39
1	Rope, picket (1 section 50 feet, 1-inch rope)		2.25
	For pack outfit, Colt's automatic machine gun, caliber .30.		
62	Boxes, ammunition	.95	58.90
4	Boxes, loading machine	6.78	27.12
2	Cases, gun	10.88	21.76
1	Cincha, ammunition		4.77
8	Frames, pack	12.63	101.04
8	Hangers, ammunition	12.56	100.48
3	Hangers, gun	14.41	43.23
3	Hangers, tripod	19.44	58.32
2	Hoods, leather, for tripod	2.67	5.34
7	Loops, lash	.21	1.47
8	Paulins, pack	2.19	17.52
	For pack outfit, Maxim automatic machine gun, caliber .30.		
1	Bar, top, of ammunition hanger		.87
400	Braces, saddle	.27	108.00
33	Cases, barrel	4.90	161.70
33	Cases, gun	29.05	958.65
33	Cases, hatchet	1.26	41.58
7	Chests for supplies	13.76	96.32
7	Chests for tools	13.65	95.55
10	Cinches, ammunition	4.77	47.70
30	Covers, gun	5.97	179.10
213	Frames, pack	1.18	251.34
278	Hangers, ammunition, right and left	6.16	1,712.48
63	Hangers, gun	12.82	807.66
74	Hangers, tripod	14.96	1,107.04
2	Hoops or ribs, steel, for pack frame	.04	.08
36	Pins, picket, and eyes	3.96	142.56
2	Pouches for rear sight for carriage	.48	.96
39	Rope, picket, sections	2.25	87.75
160	Sticks, boot, right and left	.75	120.00
2,700	Sticks, rib, assorted	.69	1,863.00
140	Sticks, top, right and left	1.16	162.40
16	Straps, ammunition hanger, long	2.55	40.80
40	Straps, cincha, for belly cincha	.42	16.80
53	Straps, filling cup	.21	11.13
800	Thongs, aparejo cincha	.12	96.00
3,044	Thongs, rawhide, 30 by ⅜ inches	.05	152.20
	PART 1, CLASS 4, SECTION 2.		
	For guns, carriages, and pack outfits, for 2.95-inch mountain gun.		
35	Bars, saddle brace	1.01	35.35
10	Boards, saddle brace bar	.36	3.60
1	Bolt, cradle axis (buffer shaft)		.72
8	Bolts, tire	.05	.40
900	Braces, saddle	.26	234.00
4	Buttons for sight pouches	.01	.04
35	Cans, oil, horizontal	2.88	100.80
60	Cans, oil, tubular	.83	49.80
3	Carriers, oil-can case	.66	1.98
15	Catches, piston-rod spring	15.91	238.65
1	Chain for right cylinder plug		.82
20	Cinches, ammunition	4.77	95.40
121	Cinches, lash	2.20	266.20
4	Covers, front sight	.55	2.20
10	Covers, leather, for oil cans	.47	4.70
41	Covers, pack	2.29	93.89

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 2—Continued.		
	For guns, carriages, and pack outfits, for 2.95-inch mountain gun—Contd.		
1	Cover, rigging (for model)	....	$5.89
10	Covers, sponge	$1.50	15.00
1	Screw, piston lock	....	1.21
120	Frames, aparejo	4.45	534.00
92	Frames, pack	10.50	966.00
15	Hangers, wheel	10.71	160.65
63	Hooks, front	.06	3.78
65	Hooks, rear	.06	3.90
10	Keys and chains, eyebolt, complete, for securing trail handspike	6.17	61.70
1	Lever, axletree	....	41.84
20	Locks, piston	9.96	199.20
100	Packings, leather buffer cap	.11	11.00
150	Packings, filling plug	.02	3.00
8	Paulins, 6 by 13 feet	10.40	83.20
50	Pins, linch	1.83	91.50
14	Pins, split, for elevating gear	1.70	23.80
60	Plates, top stick	.21	12.60
1	Reel, pack, for mountain artillery	....	644.41
151	Ribs, assorted ....per hundred	.44	.66
20	Rivets, piston lock	.15	3.00
100	Rods, lifting	3.68	368.00
241	Ropes, lair	.37	89.17
143	Ropes, lash	.63	90.09
121	Ropes, sling	.37	44.77
6	Screws, elevating joint pin stop	.53	3.18
20	Screws, piston lock	1.21	24.20
8	Screws to fasten rear sight pouch to cradle	.26	2.08
10	Screws, shaft locking	.31	3.10
4	Screws, trunnion, for clamping plates on rear sights	1.24	4.96
25	Sponges, bristle, without rods, for sponge and rammers	3.24	81.00
101	Springs, elevating gear tension	.41	41.41
30	Springs, equalizing	.41	12.30
45	Springs for piston locks	.31	13.95
877	Staples, chock, and plates, front and rear ....per hundred	3.35	29.38
1,800	Sticks, rib, assorted	.04	72.00
200	Straps, aparejo cincha	1.04	208.00
300	Straps, cincha, for belly cincha	.42	126.00
20	Straps, fastening, for top loads of pack	.52	10.40
1	Stud, brass, for flap of rear sight pouch	....	.01
20	Studs, front sight	.45	9.00
300	Thongs, aparejo cincha	.16	48.00
400	Thongs, crupper	.15	60.00
25	Washers, piston lock	.19	4.75
	For 3-inch mountain howitzer carriage, model of 1908.		
1	Buffer, regular counter recoil	....	15.80
1	Piston, special	....	94.80
	PART 1, CLASS 4, SECTION 3.		
	3-inch field gun, carriages, limbers, accessories, etc.		
20	Gun carriages, 3-inch model of 1902, complete in all respects	2,091.84	41,836.80
	For 3-inch carriages.		
62	Bearings, elevating gear transom	1.43	88.66
12	Bearings, traversing shaft	5.57	66.84
2	Blocks, sets, for panoramic sight-case packing	3.17	6.34
20	Bolts and nuts, apron latch block	.33	6.60
8	Bolts and nuts, axle seat	.48	3.84
13	Bolts, axle seat	.32	4.16
20	Bolts and nuts, for axle-seat supports	1.91	38.20
4	Bolts and nuts, axle seat and quadrant bracket, for securing range quadrant bracket to the shield	.48	1.92
16	Bolts and nuts for bracket fastening	.60	9.60
596	Bolts, brake-shoe tap	.51	303.96
50	Bolts, handspike	.62	31.00
48	Bolts, nuts and washers for main shield, assorted	.63	30.24
50	Bolts, shield brace	.32	16.00
10	Bolts, quadrant and sight case	.29	2.90
9	Bolts, tire, with nuts and washers	.06	.54
50	Boxes, oil can, for horizontal oilers	.38	19.00
1	Buffer, counter recoil	....	5.19
16	Bushings, elevating gear bracket	.72	11.52
3	Bushings, traversing shaft	4.58	13.74

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	For 3-inch carriages—Continued.		
7	Caps, hub	$4.57	$31.99
4	Cases, panoramic sight	27.71	110.84
5	Cases, range quadrant	26.80	134.00
4	Cases, traversing gear, with bushings	34.15	136.60
20	Catches, brake lever	7.12	142.40
10	Collars, shaft trip	4.93	49.30
50	Compressors, spring	1.99	99.50
474	Covers, elevating screw	1.22	578.28
316	Covers, oil-hole spring, and screws	1.71	540.36
20	Covers, tube, with hinge pins	5.20	104.00
28	Edges, spade	1.66	46.48
48	Fastenings, bracket	9.37	449.76
4	Fastenings, handspike, trail, complete	1.72	6.88
1	Fastening, range quadrant		3.49
5	Fastenings, top shield	2.46	12.30
1,426	Fastenings, wheel, complete, old model	6.05	8,627.30
300	Fastenings, wheel, without hasps	4.13	1,239.00
3	Fastenings, wheel, with tally pin for cyclometer	6.87	20.61
10	Gears, elevating bevel	9.23	92.30
21	Guards, seat arms	.60	12.60
2	Handles for cradle heads, with rivets	2.07	4.14
10	Handles, firing	4.26	42.60
10	Handles, trail	.66	6.60
1	Handspike		10.12
3	Hasps, hinge lid, for panoramic sight case	.49	1.47
800	Hasps, wheel fastening, old model	1.93	1,544.00
40	Hinges, apron	.86	34.40
10	Hinges, recoil indicator throw	1.60	16.00
2	Hinges, tool-box (for trail)	2.14	4.28
2	Hinges, top shield, center	3.33	6.66
1	Hinge for trail box lid	2.14	2.14
2	Hinges, complete, for range quadrant case	1.06	2.12
10	Hook, brake lever	4.97	49.70
3	Hubs, firing handle	9.06	27.18
36	Indicators, recoil	18.93	681.48
60	Jigs, rear sight box projection drill, with bolts	1.36	81.60
20	Kits, tool, canvas	1.97	39.40
52	Latches, pintle	2.96	153.92
10	Latches, trip	3.01	30.10
20	Latches, tube cover	1.31	26.20
35	Levers, brake	30.42	1,064.70
156	Liners, hub	3.33	519.48
4	Links, traversing, with bushings	7.54	30.16
10	Locks, elevating and traversing, complete	33.96	339.60
5	Lugs, elevating and traversing lock	10.01	50.05
31	Lunettes	6.49	201.19
20	Nuts, axle seat bolt	.16	3.20
39	Nuts, bracket stud	.13	5.07
8	Nuts for bracket-fastening bolts	.48	3.84
40	Nuts, carriage bolt	.001	.04
30	Nuts, cylinder end stud	2.10	63.00
20	Nuts, elevating and traversing lock hinge bolt	.20	4.00
6	Nuts, lunette	.21	1.26
10	Nuts, piston-rod	2.33	23.30
20	Nuts, quadrant and sight case bolt	.11	2.20
50	Nuts, shield brace	.09	4.50
20	Nuts, tie-rod fastening	.16	3.20
12	Nuts, traversing	3.03	36.36
20	Nuts, traversing link pivot	.20	4.00
30	Nuts, traversing shaft	3.03	90.90
62	Pins, apron hinge fuze setter bracket	.33	20.46
50	Pins, apron-latch	.08	4.00
80	Pins, brake beam	.45	36.00
60	Pins, brake connecting rod	.32	19.20
30	Pins, brake fulcrum	.85	25.50
3	Pins, elevating	.90	2.70
92	Pins, elevating crank-shaft split	.31	28.52
10	Pins, firing handle	.15	1.50
10	Pins, hinge, rear sight-box cover	.02	.20
50	Pins, pintle latch	.16	8.00
60	Pins, top shield hinge	.44	26.40
10	Pins, hinge, top shield fastening	.31	3.10
10	Pins, recoil lug	.68	6.80
12	Pins and cords, retaining ring hasp split	.16	1.92
10	Pins, shoulder guard	.32	3.20
10	Pins, tie rod	.25	2.50
30	Pins, traversing shaft bearing	.56	16.80
6	Pins, traversing and elevating lock hinge	.14	.84

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4; SECTION 3—Continued.		
	For 3-inch carriages—Continued.		
8	Pins, traversing and elevating lock link	$0.14	$1.12
3	Pins, trip collar	1.85	5.55
10	Pins, trip latch	.46	4.60
90	Pins, tube cover latch	.08	7.20
50	Pins, split, and cords, retaining ring hasp	.16	8.00
6	Pinions, elevating bevel	7.42	44.52
40	Pintles, without bolts or bearings	8.87	354.80
16	Plates, ammunition tube support	6.70	107.20
140	Plugs, filling, piston rod	1.22	170.80
40	Plugs, filling and drain (cylinder)	1.19	47.60
10	Plugs, firing handle	.86	8.60
10	Plungers, firing handle	.35	3.50
10	Plungers, trip latch	3.72	37.20
433	Projections, rear sight box, with rivets	.42	181.86
1	Ring, retaining, special	....	14.57
1	Rivet, lock chain, for rear sight box	....	.08
168	Rivets, spade edge	.002	.336
20	Rivets for transom bearings	.006	.12
4	Rods, brake connecting	2.40	9.60
5	Rods, piston	42.97	214.85
3	Screws, adjusting, with check nut	1.23	3.69
2,212	Screws, cylinder end stud	.10	221.20
14	Screws, elevating, inner	11.53	161.42
14	Screws, elevating, outer	12.30	172.20
4	Screws, elevating joint pin stop	.53	2.12
18	Seats, axle	2.19	39.42
10	Seats, trail	1.15	11.50
1	Segment, brake	....	12.79
14	Separators, quadrant and sight case pipe	.08	1.12
6	Shafts, elevating crank	2.89	17.34
3	Shafts, firing	8.94	26.82
56	Shafts, traversing, with links and nuts	9.32	521.92
12	Shoes, brake	1.41	16.92
8	Sides, wooden, for trail handspike, with rivets	.22	1.76
86	Springs, apron latch	.23	19.78
3	Springs, connecting rod	.22	.66
12	Springs, elevating and traversing lock	1.98	23.76
62	Springs, firing handle	.36	22.32
50	Springs, handle return	.58	29.00
2	Springs, recoil indicator	.04	.08
6	Springs, shaft return	.51	3.06
30	Springs, traversing and elevating lock	1.98	59.40
11	Springs, trip latch	.16	1.76
40	Springs, tube cover latch	.48	19.20
40	Staples, apron latch	1.63	65.20
9	Straps, doubletree, with rivets	.29	2.61
46	Studs, bracket	.50	23.00
10	Studs, cylinder end	6.95	69.50
10	Supports, front sight bracket	2.25	22.50
20	Supports, rear sight bracket	2.48	49.60
1	Support, trail seat, right	....	3.46
30	Throws, recoil indicator	.63	18.90
150	Valves, oil, complete	1.24	186.00
12	Washers for apron hinge pin for attaching fuse setter bracket	.03	.36
8	Washers for axles	3.80	30.40
9	Washers, felt, for cradle end	.01	.09
1	Washer, fiber, for cylinder end stud	....	.31
240	Washers, lock	.51	122.40
80	Washers, oil hole spring	.01	.80
2	Washers, wing nut, for panoramic sight case	.07	.14
22	Wheels with hub cap and lock washers	33.93	746.46
14	Wheels without hub cap or lock washer	29.22	409.08
8	Wheels, traversing hand	4.59	36.72
24	Caissons, 3-inch gun, model of 1902	1,158.31	27,799.44
	For 3-inch caissons.		
2	Axles	63.65	127.30
50	Bars, ammunition chest door lock, complete	2.02	101.00
47	Bearings, pintle, complete	5.25	246.75
20	Bolts and nuts, brake segment	.64	12.80
20	Bolts and nuts, pintle bearing	.56	11.20
48	Bolts and nuts, pole socket	.48	23.04
166	Chains and hooks, prop	1.28	212.48
50	Fastenings, spare pole	2.40	120.00
10	Hinges and rivets, apron, left center	1.40	14.00
20	Hinges and rivets, apron, right center	1.40	28.00
10	Hinges, apron, end, left	1.33	13.30

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	For 3-inch caissons—Continued.		
10	Hinges, apron, end, right	$1.33	13.30
2	Holders, wrench	.88	1.76
123	Latches, apron	6.76	831.48
50	Levers, brake	15.45	772.50
41	Nuts, spare pole fastening	.29	11.89
1	Nut, wing, for left side of door		.50
4	Pieces, connecting, for ammunition chest	.33	1.32
154	Pins, apron hinge	.33	50.82
20	Pins, apron latch lever	.30	6.00
20	Pins, apron latch hinge	.34	6.80
20	Pins, fastening, for prop	.36	7.20
20	Pins, fuze setter latch clevis	.26	5.20
10	Pins, fuze setter latch hinge	.34	3.40
20	Pins, fuze setter latch lever	.30	6.00
2	Rails, hand	1.72	3.44
24	Rivets, pintle spring	.006	.15
5	Rods, brake connecting	8.53	42.65
5	Rods, fuze setter bracket, lower	.87	4.35
5	Rods, fuze setter bracket, upper	1.07	5.35
20	Segments, brake	14.45	289.00
20	Separators, rear	.56	11.20
2	Shanks, hand rail, with bolts	.44	.88
100	Springs, apron latch	.23	23.00
50	Springs, fuze setter latch	.23	11.50
20	Pins, apron latch clevis	.26	5.20
444	Springs, pintle	1.95	865.80
1	Strap, doubletree, without rivets	.42	.42
32	Limbers, 3-inch gun, model of 1902, complete in all respects	662.51	21,200.32
	For 3-inch limbers.		
103	Bolts, doubletree, spare	.50	81.50
6	Bolts and nuts, pole band	.34	2.04
20	Buttons, limber prop chain	.44	8.80
21	Chains, ammunition door	.18	3.78
10	Chains, doubletree rod, spare	.92	9.20
15	Clamps, pole, spare	12.10	181.50
70	Covers, pole, copper	1.12	78.40
123	Doubletrees, spare	10.39	1,277.97
300	Fasteners, strap	.03	9.00
2	Fastenings for limber prop chains	.44	.88
50	Ferrules, pole	10.93	546.50
1	Handle, limber prop chain		.24
260	Hasps, bolts, and springs, ammunition chest door lock, spare	2.72	707.20
100	Hooks, doubletree	2.04	204.00
156	Neck yokes	9.45	1,474.20
210	Nuts, doubletree bolt, spare	.19	39.90
12	Nuts, doubletree pivot	.23	2.76
30	Nuts, pole clamp bolt, spare	.20	6.00
373	Pads, lantern bracket	.28	104.44
248	Pads, neckyoke, spare	.37	91.76
604	Pads, pole, spare	1.49	899.96
100	Pins, ammunition chest connection	.40	40.00
10	Pins, ammunition chest door-lock hinge, spare	.11	1.10
20	Pins, doubletree rod	.24	4.80
3	Pins, neckyoke counter stop	.01	.03
20	Pins, pole, spare	.38	7.60
15	Pins, tie-rod	.24	3.60
8	Pivots, doubletree	20.45	163.60
30	Props, limber	.88	26.40
190	Props, pole	8.80	1,672.00
168	Reenforces, bucket holder, with rivets, sets of	.34	57.12
20	Rivets, doubletree	.004	.08
15	Rods, doubletree stay	1.95	29.25
410	Singletrees, spare	4.54	1,861.40
12	Springs, pintle	1.72	20.64
5,310	Straps, paulin	.53	2,814.30
1	Upsetter, connecting piece		39.01
12	Limbers, 3-inch gun and 3.8-inch howitzer store, model of 1902	668.72	8,024.64
2	Limbers, 3-inch gun and 3.8-inch howitzer forge, model of 1902	652.30	1,304.60
	For 3-inch gun forge and store limbers.		
1	Chest, forge limber		239.97
20	Bolts, shot	.75	15.00
5	Brackets, ax head	1.20	6.00
20	Brackets, hand rail	.44	8.80
5	Brackets, lid prop	.99	4.95

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	For 3-inch gun forge and store limbers—Continued.		
5	Brackets, shovel blade	$1.59	$7.95
5	Brackets, sledge handle	.49	2.45
10	Covers, oil-can support	1.74	17.40
1	Fastening, shoeing rasp		.21
10	Fasteners, sledge strap	.04	.40
5	Guides, lid prop	2.96	14.80
5	Hasps	1.67	8.35
5	Hasp hinges	.99	4.95
20	Hinges, lid	1.92	38.40
5	Sledge holders	.89	4.45
10	Latches, oil-can support	1.87	18.70
1	Lid		33.38
2	Nuts, wing, for panoramic sight case	.35	.70
5	Packings, wooden, for anvil	1.88	9.40
5	Packings, wooden, for forge	.38	1.90
5	Packings, wooden, for rivet sets	.38	1.90
5	Packings, wooden, for small tools	1.81	9.05
2	Pins, wing nut, for panoramic sight case	.70	1.40
6	Reenforces, chest rail and chest front	.30	1.80
8	Rivets for wing nut pins for panoramic sight case	.002	.016
30	Springs, oil-can support latch	.48	14.40
4	Straps, sledge, and shoes	.59	2.36
10	Supports, oil-can, front	2.47	24.70
10	Supports, oil-can, middle	2.47	24.70
10	Supports, oil-can, rear	4.22	42.20
10	Turnbuckles, spare	1.09	10.90
10	Wagons, 3-inch gun store, model of 1902	725.00	7,250.00
	For 3-inch battery and store wagons.		
10	Bolts and nuts for spare wheel supports	.35	3.50
2	Braces, diagonal, for saddler's chest	.37	.74
30	Cans, oil, 5 gallons each	12.78	383.40
18	Cans, storage oil	12.78	230.04
10	Chains, door, spare	.18	1.80
3	Chains, plug, with split pins for oil cans, 5 gallons	.02	.06
2	Cocks, stop, for 5-gallon oil cans	2.03	4.06
5	Fasteners, crowbar strap	.17	.85
1	Hasp		1.67
5	Hasps and staples	2.28	11.40
644	Irons, corner, with nuts and washers	1.27	817.88
5	Levers, brake, spare	12.30	61.50
6	Nuts, oil-can plug	.32	1.92
5	Props, spare	9.77	48.85
428	Rods, end tie, with nuts and washers	.27	115.56
6	Springs, oil-can plug	.03	.18
	Accessories, etc., for 3-inch gun.		
21	Brushes, cradle	7.31	153.51
4	Brushes, dust guard	4.88	19.52
3	Slush brushes	1.81	5.43
36	Cans, oil, tubular	11.05	397.80
150	Cases, carrying, for hand fuse setters for 21-second combination fuses	3.80	570.00
9	Chests for spare breech mechanism	5.22	46.98
28	Chests for miscellaneous spare parts	22.67	634.76
100	Covers, breech	1.75	175.00
36	Covers for fuse setters	1.07	38.52
100	Covers, rear sight shank	1.26	126.00
69	Covers, spare wheel hub	1.80	124.20
57	Covers, sponge	.29	16.53
50	Covers, tompion and muzzle	1.27	63.50
104	Cushions, axle seat	2.42	251.68
100	Drifts, copper, large	.72	72.00
100	Drifts, copper, small	.36	36.00
65	Funnels, cylinder	1.39	90.35
56	Funnels for oiling wheels	2.06	115.36
4	Guards, dust, for modified 56-inch wheels	2.04	8.16
76	Holders, lock washer	.63	47.88
380	Lanyards	2.68	1,018.40
18	Nozzles, oil can	.46	8.28
12	Oilers, horizontal	.75	9.00
158	Paulins, 12 by 12 feet	14.61	2,308.38
12	Pouches, leather, for spare parts	3.05	36.60
68	Punches, small steel	.22	14.96
261	Ropes, picket	3.72	983.72
8	Sights, breech bore	.79	6.32
8	Sights, muzzle bore	1.51	12.08

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	Accessories, etc., for 3-inch gun—Continued.		
50	Sponges and rammers, complete	$6.80	$340.00
20	Sponges for sponge and rammer	.58	11.60
1	Staff, sponge		1.59
105	Tools, hub liner driving, for 56-inch wheels	1.19	124.95
40	Wrenches, filling and drain plug, for tool kit	2.16	86.40
80	Wrenches, range quadrant	1.22	97.60
50	Wrenches, screw slot	.64	32.00
185	Wrenches, spanner	6.40	1,184.00
1	Bar, formed dolly		3.06
1	Bar, oil can, with hasp hinge and bracket		5.82
2	Cups, rivet	1.32	2.64
22	Pins, rotating, for 3-inch drill cartridges	.14	3.08
2	Snaps, rivet	1.15	2.30
	For 3.8-inch gun, model of 1907.		
8	Brushes, cradle, complete	4.88	39.04
2	Caps, hub	10.57	21.14
8	Covers, rear sight bracket	.73	5.84
8	Covers, rear sight shanks	1.26	10.08
10	Covers, sponge, complete	.34	3.40
16	Cushions, axle seat	2.33	37.28
60	Fastenings, wheel, complete, including hasps	15.70	942.00
64	Hasps, wheel fastening	2.05	131.20
10	Lacings	.02	.20
4	Liners, hub	3.33	13.32
40	Packings, rear sight shank	7.02	280.80
8	Pouches, leather, for spare parts	3.05	24.40
2	Tools, hub liner driving	.93	1.86
8	Washers, lock	.76	6.08
2	Wheels, 56-inch	33.93	67.86
	For 3.8-inch howitzer.		
31	Cans, oil, tubular	22.07	684.17
8	Caps, hub	4.57	36.56
2	Chests for miscellaneous spare parts	22.71	45.42
2	Funnels, cylinder	1.55	3.10
14	Latches, pintle	2.96	41.44
28	Liners, hub	3.33	93.24
6	Lunettes	6.49	38.94
8	Nozzles, oil can	.46	3.68
12	Nuts, lunette	.21	2.52
28	Springs, pintle latch	1.30	36.40
4	Tools, hub liner driving	.93	3.72
2	Wagons, 3.8-inch howitzer battery, model of 1902	795.07	1,590.14
2	Wagons, 3.8-inch howitzer store, model of 1902	742.01	1,484.02
28	Washers, lock	.76	21.28
16	Wheels	38.48	615.68
1	Carriage, 4.7-inch howitzer, model of 1908, complete		9,999.73
	For 4.7-inch howitzer carriage.		
10	Caps, hub	5.83	58.30
1	Cradle of new design, complete, with parts attached		1,864.85
36	Liners, hub	4.80	172.80
16	Plates, front reinforce, left	3.03	48.48
16	Plates, front reinforce, right	3.03	48.48
16	Plates, main reinforce, left	9.25	148.00
16	Plates, main reinforce, right	9.25	148.00
1	Reinforce, rocker		13.58
1	Screw, inner elevating		23.70
1	Stirrup, spring		54.30
4	Washers, lock	.76	3.04
24	Wheels, 58-inch	44.01	1,056.24
8	Limbers, 4.7-inch howitzer carriage, model of 1909, complete	926.62	7,412.96
	For 4.7-inch howitzer limber.		
3	Bars, lock, complete	3.28	9.84
11	Caps, hub	5.83	64.13
2	Hasps, lid, complete	2.43	4.86
11	Latches, pintle	2.96	32.56
5	Pintles, complete	19.86	99.30
6	Springs, pintle	1.90	11.40
22	Springs, pintle latch	1.30	28.60
96	Straps, shot tong	.27	25.92
22	Washers, lock	.76	16.72
12	Caissons, 4.7-inch howitzer, model of 1908	1,219.16	14,629.92

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	For 4.7-inch howitzer caisson.		
3	Bars, lock, complete	$3.28	$9.84
9	Caps, hub	5.83	52.47
48	Fastenings, wheel	3.34	160.32
6	Latches, apron	4.77	28.62
9	Latches, pintle	2.96	26.64
3	Levers, brake	42.16	126.48
9	Lunettes	7.13	64.17
6	Pins, lunette	.48	2.88
3	Pintles, complete	19.86	59.58
12	Poles, connecting, complete, with lunettes and keys	73.52	882.24
3	Props with chains and hooks	7.48	22.44
12	Shoes, brake	2.02	24.24
6	Springs, apron latch	.17	1.02
28	Springs, pintle latch	1.30	36.40
18	Washers, lock	.76	13.68
6	Limbers, 4.7-inch howitzer, forge, model of 1902, complete	668.96	4,013.76
6	Wagons, 4.7-inch howitzer, battery, model of 1902, complete in all respects	795.07	4,770.42
6	Limbers, 4.7-inch howitzer, store, model of 1902, complete	687.80	4,126.80
6	Wagons, 4.7-inch howitzer, store, model of 1902, complete	742.01	4,452.06
	Spare parts and equipments for 4.7-inch howitzer carriages, caissons, and limbers.		
48	Cans, oil	23.83	1,143.84
56	Cans, oil, lower, rectangular, 5-gallon	15.11	846.16
28	Cans, oil, upper, rectangular, 7½-gallon	16.62	465.36
2	Chests for miscellaneous spare parts	8.27	16.54
24	Covers, breech	4.95	118.80
24	Covers, muzzle	2.32	55.68
8	Drifts, copper, large	.72	5.76
8	Drifts, copper, small	.36	2.88
8	Punches, steel, small	.36	2.88
16	Ropes, picket	3.72	59.52
1	Tongs, shot	....	5.84
12	Tools, hub liner driving	1.38	16.56
8	Wrenches for buffer and gland	10.40	83.20
7	Wrenches, compressor ring and hub band	14.66	102.62
8	Wrenches, cylinder head	9.48	75.84
8	Wrenches, nut, [illegible]-inch and [illegible]-inch	.58	4.64
6	Wrenches, nut, [illegible]-inch and ½-inch	.26	1.56
36	Wrenches, spanner, for 58-inch wheels	6.41	230.76
	PART 1, CLASS 4, SECTION 4.		
	For 3.6-inch mortar, model of 1890.		
2	Covers, breech	1.88	3.76
2	Covers, muzzle	2.73	5.46
24	Limbers, 4.7-inch gun and 6-inch howitzer, model of 1905	1,270.77	30,498.48
	For 4.7-inch gun limbers.		
12	Caps, hub	5.32	63.84
16	Fastenings, wheel, complete	3.69	59.04
4	Hasps, wheel fastening	5.33	21.32
48	Hooks, cartridge	2.78	133.44
6	Hooks, wheel	2.61	15.66
8	Latches, pintle	2.96	23.68
16	Liners, hub	9.00	144.00
19	Poles, connecting, complete, with lunettes	46.08	875.52
16	Springs, pintle latch	1.30	20.80
24	Washers, lock	.76	18.24
9	Wheels	60.22	541.98
16	Carriages, 4.7-inch gun, model of 1906	7,300.00	116,800.00
	For 4.7-inch gun carriages.		
4	Covers, cylinder	21.50	86.00
8	Edges, spade	3.79	30.32
12	Handspikes	1.39	16.88
16	Keys, elevating bevel gear	2.65	42.40
6	Latches, trip	3.01	18.06
2	Wheels	63.39	126.78
44	Caissons, 4.7-inch gun, model of 1908	1,743.92	76,732.48
	For 4.7-inch gun caissons.		
8	Caps, hub	5.32	42.56
24	Fastenings, wheel, complete	3.69	88.56
48	Hooks, cartridge	2.78	133.44

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 4—Continued.		
	For 4.7-inch gun caissons—Continued.		
8	Latches, pintle	$2.96	$23.68
24	Liners, hub	9.00	216.00
16	Springs, pintle latch	1.30	20.80
16	Washers, lock	.76	12.16
20	Wheels	63.39	1,267.80
27	Limbers, 4.7-inch gun forge, model of 1908, complete	2,162.53	58,388.31
3	Wagons, 4.7-inch gun battery, model of 1908, complete	2,593.29	7,779.87
11	Limbers, 4.7-inch gun store, model of 1908, complete	2,179.76	23,977.36
3	Wagons, 4.7-inch gun store, model of 1908, complete	2,593.29	7,779.87
	For 4.7-inch gun store wagon, model of 1908.		
18	Caps, spare staff coupling	2.13	38.34
2	Couplings, staff, spare	21.30	42.60
	Equipments for 4.7-inch carriages, limbers, etc.		
70	Cans, oil, 5-gallon	15.12	1,058.40
16	Cans, oil, tubular	23.83	381.28
2	Cases for hand fuse setters	3.80	7.60
16	Cases, rear sight shank	31.05	496.80
5	Chests for duplex chain blocks	15.28	76.40
8	Chests for miscellaneous spare parts	8.28	66.24
48	Funnels, cylinder filling	2.17	104.16
8	Funnels for oiling wheels	2.06	16.48
40	Lanyards	1.66	66.40
16	Oilers, horizontal	.77	12.32
16	Pouches, leather, for spare parts	3.05	48.80
4	Sights, breech bore	1.70	6.80
4	Sights, muzzle bore	1.36	5.44
1	Tools, hub liner driving		1.38
120	Wrenches, spanner	1.50	180.00
1	Carriage, 6-inch howitzer, model of 1908, complete		13,710.35
	For 6-inch howitzer carriage.		
16	Bearings, ball thrust	3.00	48.00
24	Bolts, ball-crank bearing	1.21	29.01
1	Chain, retracting		1.58
1	Chain, trail		1.32
32	Clutches, pinion shaft	3.03	96.96
24	Covers, spring	.008	.19
24	Gears	6.05	145.20
24	Gears, intermediate	9.40	225.60
8	Nuts, brake screw	4.65	37.20
8	Nuts, thrust bearing	3.40	27.20
8	Pins, brake screw nut	.41	3.29
8	Pivots, traversing	4.856	38.85
24	Retainers, bearing	7.797	187.12
8	Screws, brake	9.335	74.68
16	Screws, locking	.1525	2.44
24	Separators, inner, for recoil springs	2.78	66.72
48	Separators, outer, for recoil springs	3.86	185.28
8	Shafts, pinion, with nuts and split pins	6.145	49.16
32	Sleeves, intermediate gear	1.84	58.88
48	Springs, brake mechanism centering	.78	37.44
40	Springs, clutch	1.41	56.40
16	Studs with nuts and split pins	1.17	18.72
32	Washers, inner spring	.24	7.68
32	Washers, outer spring	.61	19.52
8	Washers, traversing pivot	.36	2.88
	For 6-inch howitzer limbers.		
144	Fasteners, strap	.04	5.76
100	Fasteners, strap, for shot tongs	.03	3.00
288	Straps, paulin	.53	152.64
8	Springs, pintle latch	1.30	10.40
4	Latches, pintle	2.96	11.84
16	Washers, lock	.76	12.16
	For 6-inch howitzer caissons.		
4	Latches, pintle	2.96	11.84
8	Springs, pintle latch	1.30	10.40
	For 6-inch howitzer store wagons.		
4	Couplings, staff, spare, male and female	10.65	42.60

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 4—Continued.		
	Equipments for 6-inch howitzer.		
64	Cans, oil, rectangular	$12.151	$777.66
8	Tools, hub liner driving	1.38	11.04
1	Wrench, elevating worm-bearing		6.45
6	Wrenches, rear cylinder head and recoil buffer	12.94	77.64
20	Wrenches, spanner	6.44	128.80
8	Wrenches for traversing thrust bearing nut	1.87	14.96
	For 5-inch gun.		
5	Brushes and scrapers	8.85	44.25
3	Covers, breech	2.81	8.43
14	Covers, tompion and muzzle	2.80	39.20
14	Drills, gunner's	.73	10.22
16	Drills, vent	.36	5.76
20	Punches, vent	.73	14.60
1	Sight, breech bore		3.50
1	Sight, muzzle bore		1.76
18	Straps, retaining, for elevating screw	.34	6.12
8	Trays, shot	3.80	30.40
	For 7-inch howitzer.		
16	Caps, nipple	.80	12.80
15	Covers, tompion and muzzle	3.07	46.05
14	Drills, vent	1.25	17.50
2	Lanyards	.85	1.70
64	Plugs, oil	.36	23.04
16	Plugs, screw, for spring centers	.72	11.52
14	Punches, gunner's	.50	7.00
4	Ropes, brake lever	.70	2.80
4	Screw drivers, bar	.83	3.32
1	Sight, breech bore		3.65
1	Sight, muzzle bore		1.76
	For 5-inch and 7-inch equipment.		
120	Bags, sand	.71	85.20
54	Lanyards, 30-foot	.91	49.14
16	Tamps	1.49	23.84
2	Tripods	68.77	137.54
80	Washers, fiber, for wheels	.42	33.60
180	Washers, leather, for wheels	.30	54.00
	PART 1, CLASS 4, SECTION 7.		
1	Cover, canvas, for limber chest for Gatling gun, cal. .30		.70
	PART 1, CLASS 4, SECTION 8.		
	Artillery harness and parts.		
500	Sets harness, lead	130.66	65,330.00
211	Sets harness, wheel	160.26	33,814.86
	Spare parts for harness.		
100	Breechings, complete	8.87	887.00
80	Bridles and bits, near	3.64	291.20
80	Bridles and bits, off	5.01	400.80
4	Cinchas, wheel	1.85	7.40
104	Collars, steel, horse	8.93	928.72
6	Coronas, model of 1910	4.28	25.68
2,092	Covers, lead trace, with calfskin thongs	1.89	3,953.88
2,510	Covers, wheel trace, with calfskin thongs	.93	2,334.30
12	Devices, quick release	1.47	17.64
1	Dock, crupper		.70
100	Hooks, breast strap	.22	22.00
1,014	Hooks, spring	.08	81.12
150	Hooks, side strap	.11	16.50
150	Leathers, sweat, pairs	2.11	316.50
100	Loops, trace	.30	30.00
24	Martingales with cincha straps	2.95	70.80
24	Plates, trace, assembled, including loops, hame tugs, and double-eye loops	.93	22.32
1,000	Rollers, lead rein	.10	100.00
150	Rollers and straps, lead rein	.22	33.00
610	Sacks, harness, white duck	4.00	2,440.00
2	Stirrups, model of 1910	.85	1.70
140	Straps, back, with crupper	4.11	575.40
140	Straps, connecting	.46	64.40

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 8—Continued.		
	Spare parts for harness—Continued.		
200	Straps, coupling	$0.92	$184.00
900	Straps, lead rein roller	.14	126.00
700	Thongs, crupper	.15	105.00
651	Traces, wire, lead, model of 1908, leather covered	2.33	1,516.83
300	Traces, wheel, model of 1908	5.10	1,530.00
800	Whips, model of 1909	2.01	1,608.00
	PART 1, CLASS 4, SECTION 9.		
	For 3-inch gun battery wagon, model of 1908.		
1,061	Buckets, watering, canvas	1.83	1,941.63
1	Cyclometer, with tye-rod clamp		22.30
2	Cyclometers, without wheel fastenings	35.88	71.76
1	Spring for cyclometer		.12
1	Stop for cyclometer		.38
2	Studs (tally pins) for cyclometer	.67	1.34
	PART 1, CLASS 5, SECTION 1.		
26	Reels, model of 1909	3,535.50	91,923.00
	For reel and cart, model of 1909.		
26	Bolts, clamp (for pintle seat clamp)	.40	10.40
26	Bolts, doubletree	.50	13.00
26	Bolts, pintle bearing	.40	10.40
36	Bolts and nuts, rail	1.30	46.80
52	Connections, telephone	.25	13.00
80	Fasteners, strap	.07	5.60
100	Fasteners, strap, for spanner and lock washer holders	.04	4.00
225	Fasteners, picket rope strap	.05	11.25
26	Fastenings, wheel, complete	6.05	157.30
26	Locks, adjusting ring	.23	5.98
26	Nuts for clamp bolts	.23	5.98
52	Nuts, crown, 0.375	.19	9.88
52	Nuts, crown, 0.5	.21	10.92
26	Nuts, doubletree	.16	4.16
26	Nuts, pintle bearing bolt	.16	4.16
26	Pads, lantern bracket	.25	6.50
26	Props, pole	8.80	228.80
52	Screws, adjusting ring lock	.61	31.72
26	Sets	3.05	79.30
26	Shoes, drum latch brake	.59	15.34
36	Springs, brake	.32	11.52
26	Springs, drum-latch pawl	.08	2.08
26	Springs, drum-latch plunger	.24	6.24
26	Springs, oiler (for securing hand oil can)	.53	13.78
26	Springs, pintle latch	1.30	33.80
52	Springs, tension, for wire guide	.15	7.80
26	Staves, operators', with head	3.64	94.64
26	Staves, operator's, with hook	2.72	70.72
26	Wrappers, tool	.80	20.80
52	Wrenches, nut	7.56	393.12
3	Wrenches, socket	1.85	5.55
26	Wrenches, spanner	3.90	101.40
20	Cases for tripod for battery commander's telescope, model of 1905	6.92	138.40
10	Cases, carrying, for tripod and support, observation telescopes, field, model of 1908	10.93	109.30
1	Case, carrying, for the telescope of the 3-inch telescopic sight, model of 1904		13.71
10	Cases, carrying, for observation telescopes, field, model of 1908	28.33	283.30
48	Cases with straps, for battery commander's rulers	.69	33.12
15	Cases for battery commander's telescopes, model of 1905	22.84	342.60
20	Covers for elevation quadrants, model of 1906	.45	9.00
250	Pouches for Weldon range finders	.71	177.50
2	Rests, with telescope clasp, for carrying cases for observation telescope, model of 1908	2.00	4.00
7	Rests, with telescope clasps, for carrying cases for battery commander's telescope, model of 1905	1.20	8.40
7	Retainers, leather, for carrying cases, for battery commander's telescopes	.05	.35
2	Retainers, leather, for carrying cases, for observation telescope, model of 1908	.05	.10

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 5, SECTION 3.		
	Artillery targets and parts.		
25	Targets, fixed or appearing	$6.04	$151.00
	For fixed or appearing targets:		
3	Bases, pipe	3.13	9.39
30	Eyebolts for uprights	.17	5.10
10	Frames, complete	5.03	50.30
100	Pins, bent		.86
26	Stakes, wood	.49	12.74
370	Covers for gun and caisson silhouettes	1.83	677.10
1,630	Covers for kneeling silhouettes	1.23	2,004.90
820	Covers for mounted silhouettes	2.17	1,779.40
2,390	Covers for standing silhouettes	1.83	4.373.70
40	Reels for towing cables	10.43	417.20
50	Sleds for movable targets	3.71	185.50
40	Stands for reels	11.08	443.20
	PART 1, CLASS 5, SECTION 4.		
2	Charges, dummy, for 6-inch gun, model of 1900	4.52	9.04
2	Charges, dummy, for 10-inch gun, model of 1888	17.36	34.72
	PART 1, CLASS 7, SECTION 5.		
1,452	Catches, bayonet scabbard, for bayonet, model of 1905	.056	81.31
17	Hooks for bayonet scabbard, model of 1905	.08	1.36
2,005	Pivots for bayonet scabbard, model of 1905	.01	20.05
56,510	Scabbards, bayonet, model of 1905	1.25	70,637.50
32,344	Scabbards, bayonet, model of 1910	.87	28.139.28
2	Scabbards, bayonet, model of 1910 (wood and metal parts only)	.25	.50
566	Scabbards for bolos, model of 1908	1.76	996.16
2,126	Scabbards for bolos, model of 1910	1.04	2,211.04
2	Scabbards, bolo, model of 1910 (wood and metal parts only)	.42	.84
5,000	Scabbards, Hospital Corps knives	1.59	7,950.00
1	Washer, outside, for bayonet scabbard		.01
	PART 1, CLASS 9, SECTION 1.		
	Infantry equipments and components.		
100	Adapters, waist belt, black	.03	3.00
665	Attachments, hook, for noncommissioned staff officer's belts	.18	119.70
4,060	Bags, blanket, olive drab	1.76	7,145.60
800	Bags, blanket, olive drab, Forest Service	1.47	1,176.00
69	Belts, shoulder (Cavalry equipment board model)	2.72	187.68
915	Belts, waist, Hospital Corps	1.01	924.15
3,804	Belts, waist, Infantry	1.00	3,804.00
10	Boots, rifle carrier, with shock absorber (C. E. B. model)	4.20	42.00
58	Boots, rifle carrier, without shock absorber (C. E. B. model)	2.70	156.60
4	Boxes, cartridge, McKeever, cadet, caliber .30, russet	2.08	8.32
455	Boxes, condiment, model of 1910	10.54	4,795.70
5	Buckles, bronze, for surplus kit bags	.42	2.10
928	Buckles and clasps for garrison belts for band	.31	287.68
200	Buttons, brass, for use with cadet cross-belt .... per hundred	2.23	4.46
44.636	Cans, bacon, model of 1910	.12	5,356.32
136.589	Cans, meat, aluminum, model of 1905	.45	61,465.05
6,700	Cans, meat, model of 1910	.40	2.680.00
31,300	Cans, meat, tin	.28	8,764.00
5.000	Canteens, tin, without felt or canvas covering, metal parts only	.17	850.00
100	Canteens, 2-quart, copper, tinned on both sides, without straps, with letters "U. S. R. S."	1.30	130.00
300	Canteens, 2-quart, tin, olive drab, marked "U. S. G. S."	1.38	414.00
532	Canteens, Infantry, with straps	.49	260.68
5.002	Canteens, Infantry, with straps, without letters "U. S."	.49	2,450.98
77	Carriers, picket pin (C. E. B. model)	.51	39.27
608	Cases, cleaning rod, model of 1910	.13	79.04
44	Chests, artificer's, model of 1910	16.69	734.36
4.695	Chests, bacon, model of 1910	14.88	69,861.60
2	Cookers, fireless (Army pattern)	41.45	82.90
14,000	Corks and chains, canteen	.02	280.00
4.766	Covers, canteen, dismounted, model of 1910	.91	4,337.06
1.700	Covers, canteen, olive drab, without letters "U. S."	.11	187.00
14,235	Covers, canteen, olive drab	.11	1.565.85
76.088	Fasteners, sets, for Infantry cartridge belt, caliber .30, model of 1910	.07	5,326.16
29,728	Fasteners, sets, for enlisted men's garrison belts	.35	10.404.80
633	Fasteners, sets, for noncommissioned staff officers' belts	.31	196.23
37,323	Forks, model of 1910	.04	1,492.92
47,519	Forks	.04	1,900.76
24.961	Gun slings, model of 1907	.94	23,463.34

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 9, SECTION 1—Continued.		
	Infantry equipments and components—Continued.		
1	Gun sling, with attachment, special		$20.89
1	Gun sling, made of webbing, with metal attachment		1.85
2,700	Haversacks, model of 1908, to be stenciled with the letters "E. P." or "G. R."	$1.36	3,672.00
25,371	Haversacks, model of 1908	1.36	34,504.56
5,400	Haversacks, model of 1908, without letters "U. S."	1.36	7,344.00
50	Haversacks, without inside fittings, marked "U. S. G. S."	.90	45.00
30,950	Haversacks and carriers, model of 1910	2.44	75,518.00
3,000	Hooks, brass wire end per hundred	.33	9.90
331,844	Hooks, haversack attaching "S" do	.56	1,858.33
6,000	Hooks, haversack snap	.03	180.00
1,330	Hooks, snap, for noncommissioned staff officers' belts	.46	611.80
106,841	Knives, model of 1910	.11	11,752.51
769	Knives	.12	92.28
10,500	Loops, brass, for gun slings, model of 1907	.02	210.00
200	Loops, waist belt	.07	14.00
1,000	Linings, canteen, felt	.05	50.00
10	Pins, aluminum tent (Infantry board model)	.28	2.80
32,263	Pouches, first aid, model of 1910	.11	3,548.93
26,276	Pouches for first-aid packets, model of 1907	.12	3,153.12
665	Slides, belt, for noncommissioned staff officers' belts	.11	73.15
34,023	Spoons, model of 1910	.07	2,381.61
9,178	Spoons	.03	275.34
100	Straps, blanket roll, C	.12	12.00
2,108	Straps, canteen-haversack	.92	1,939.36
25,228	Straps, web canteen	.27	6,811.56
4,050	Straps, blanket bag coat, black, pairs	.81	3,280.50
3,600	Straps, blanket bag shoulder, black, pairs	.87	3,132.00
36	Straps, web shoulder, with snap hooks at both ends	.65	23.40
1,500	Straps, web shoulder, olive drab	.48	720.00
69	Suspenders, gun-sling (C. E. B. model)	.66	45.54
	PART 1, CLASS 9, SECTION 2.		
	Cavalry equipment and components.		
3,000	Boxes, cartridge, caliber .38	.64	1,920.00
114	Buttons, revolver holster	.02	2.28
19,257	Canteens, Cavalry, without straps	.48	9,243.36
9	Carriers, saber, enlisted men's, with shock absorber (C. E. B. model)	2.39	21.51
61	Carriers, saber, enlisted men's, without shock absorber (C. E. B. model)	.89	54.29
212	Covers, canteen, mounted, model of 1910	.97	205.64
14,104	Fasteners, sets, cartridge belt, for revolver-cartridge belts, caliber .45, model of 1909	.06	846.24
6,288	Holsters, revolver, caliber .38	1.12	7,042.56
76	Holsters, revolver (C. E. B. model)	1.81	137.56
2	Holsters for Colt's automatic pistol, caliber .45, special	1.60	3.20
6,754	Holsters for caliber .45 Colt's revolver, model of 1909	1.22	8,239.88
6,000	Hooks, snap, for Cavalry canteen strap	.05	300.00
196	Hooks, saber belt snap	.46	90.16
61	Knots, saber (C. E. B. model)	.43	26.23
1	Lanyard, revolver		.32
1,895	Lanyards, revolver, model of 1910	.17	322.15
2,600	Rings, studs, and washers for revolver holster, caliber .38	.03	78.00
2	Safes for dress belt for drum major, Cavalry	.38	.76
1,000	Slides, saber belt, Cavalry	.09	90.00
12,000	Straps, Cavalry canteen	.37	4,440.00
1,089	Thongs, revolver holster	.09	98.01
	PART 1, CLASS 9, SECTION 3.		
	Artillery equipment and components.		
3,256	Knapsacks, Artillery	4.34	14,131.04
41	Knapsacks, pairs, ration bag, of No. 1 canvas (C. E. B. model)	2.91	119.31
32	Knapsacks, pairs, ration bag, of No. 4 canvas (C. E. B. model)	2.73	87.36
	PART 1, CLASS 9, SECTION 5.		
	Horse equipments and components.		
1	Bit, curb, special, for Cavalry bridle, model of 1909		3.99
1	Bit, curb, with 4-inch mouthpiece, for Cavalry bridle, model of 1909		1.68
1	Bit, jointed Pelham, of nonrusting material		8.03
6	Bits, snaffle, special	1.49	8.94
3,424	Bridles, Cavalry, model of 1909	7.76	26,570.24
95	Halter bridles, combination, model of 1909	7.02	666.90
10	Halter bridles, model of 1910, with snaffle bits	7.02	70.20

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles	Price.	Amount.
	PART 1, CLASS 9, SECTION 5—Continued.		
	Horse equipments and components—Continued		
500	Brow bands, for model of 1909 bridle	$0.20	$100.00
516	Brushes, horse	1.26	650.16
600	Cantles with rivets	.34	204.00
930	Chains, curb, with hooks, model metal	.52	483.60
1,000	Chains, halter	.68	680.00
8,000	Chains, curb, with hooks, model of 1909	.58	4,640.00
58	Cinchas, hair	1.58	91.64
1	Cincha, special		3.07
1,398	Covers, horse, blanket lined	10.39	14,525.22
708	Covers, saddle	2.15	1,522.20
420	Covers, saddle, white duck, russet leather	2.15	903.00
600	Covers, rawhide, with thongs for saddles	1.96	1,176.00
516	Currycombs	.58	299.28
24	"D", cheek, for Cavalry bridle, model of 1909	.02	.48
1	Facing, sheepskin, set of, for Whitman saddle, 12 inches		.49
1	Headstall, bridle, for curb bridle, model of 1902		1.84
3,744	Headstalls, halter	2.31	8,648.64
3	Hoods, horse, not lined	2.17	6.51
9,000	Hooks, curb chain	.06	540.00
4,000	Hooks, lariat snap	.08	320.00
2,075	Hooks snap, watering bridle	.10	207.50
27	Insignia "TENN", dress and service saddlecloths	.07+	1.91
448	Lariats	.74	331.52
250	Latches, throat, for 1909 bridle	.31	77.50
79	Linings, saddlebag, pairs	.68	53.72
128	Links, Cavalry	.27	34.56
25	Mountings, bridle, sets of, bronze (without bits or curb chains)	.68	17.00
25	Mountings, martingale, sets of, bronze	.15	3.75
15	Nosebags, duck bottom	.64	9.60
5,433	Nosebags, leather bottom	1.31	7,117.23
21,600	Ornaments, brow band, for curb bridle, model of 1902	.04	864.00
1,000	Ornaments, brow band, for model of 1909 bridle	.04	40.00
26,200	Ovals, saddle	.02	524.00
250	Pieces, cheek, for model of 1909 bridle	.47	117.50
250	Pieces, crown, for model of 1909 bridle	.38	95.00
448	Pins, picket	.27	120.96
600	Pommels with rivets	.26	156.00
510	Reins for bridoon bridle, model of 1909	1.01	515.10
2,263	Reins for curb bridle, model of 1902	1.21	2,738.23
500	Reins for curb bridle, model of 1909	.92	460.00
1	Rein, hand for halter bridle		1.23
1	Rein, bridle, ⅞ inch, for combination halter bridle		1.78
6	Rowels for enlisted men's spurs	.01	.06
128	Saddlebags	8.79	1,125.12
1	Saddlebags, pair, special		9.20
1,497	Saddlecloths, service	3.12	4,670.64
1	Saddlecloth, enlisted men, Fifth Artillery, "N. C. S.", special		2.93
139	Saddlecloths, service, with insignia	3.28	455.92
118	Saddles, Cavalry, complete, lined with sheepskin	24.65	2,908.70
1	Saddletree, McClellan, covered, including quarter strap black leather, for Cavalry, 12 inches		14.63
600	Shields, saddle, assorted	.02	12.00
18,491	Snaps watering bit	.10	1,849.10
2	Spurs for enlisted men	.25	.50
18,200	Staples, foot, high	.02	364.00
22,248	Staples, foot, low	.02	444.96
21,412	Staples, foot, semicircular	.02	428.24
2,000	Stirrups hooded	1.02	2,040.00
4,392	Stops for coat straps ... per hundred	.44	19.32
750	Straps, blanket bag coat, black pairs	.81	607.50
500	Straps, bridoon, for 1909 bridles	.18	90.00
3,000	Straps, cincha	.42	1,260.00
2	Straps, cincha, special, for saddle	.43	.86
1,200	Straps, coat 60 inches long	.38	456.00
14,519	Straps, coat, cantle	.33	4,791.27
18,684	Straps, coat, pommel	.27	5,044.68
28,252	Straps, halter	.83	23,449.16
68	Straps, lariat	.15	10.20
2,500	Straps, quarter, adjustable	4.07	10,175.00
600	Straps, quarter, self-adjusting	2.30	1,380.00
1	Strap, quarter, special		14.04
7,500	Straps, saddlebag side	.24	1,800.00
5,012	Straps, spur, Cavalry	.21	1,052.52
10,472	Straps, stirrup	.68	7,120.96
2	Straps, stirrup, and sweat leathers, combined, pairs	5.16	10.32
10,340	Studs, saddlebag, bronzed	.02	206.80
4,982	Surcingles, olive drab	.99	4,932.18
1.000	Thongs, curb-bit, for 1909 bridles	.97	9.70

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles	Price.	Amount.
	PART 1, CLASS 9, SECTION 5—Continued.		
	Polo equipment.		
223	Boots, polo, pairs	$1.93	$430.39
213	Bridles, cavalry, model of 1906	8.51	1,812.63
201	Chains and hooks, curb, for 1906 bridle	.52	104.52
100	Girths, 3½-inch, polo	1.37	137.00
100	Girths, 5-inch, polo	2.23	223.00
10	Headstalls for 1906 bridle	1.80	18.00
25	Mountings, Cavesson, sets of, bronze	.06	1.50
50	Nails, saddle, nickel head, polo	.03	1.50
173	Nosebands, Cavesson	2.56	442.88
228	Numnahs	5.09	1,160.52
1,050	Ornaments, brow band, for 1906 bridle	.12	126.00
30	Pads, felt, for English saddles	1.74	52.20
10	Reins, curb, for 1906 bridle	1.25	12.50
190	Saddles, polo, complete	38.77	7,366.30
188	Straps, breast, and martingales	3.49	656.12
	Of Cavalry equipment board model.		
23	Bridles, halter, combination	5.35	123.05
59	Brushes, horse	.94	55.46
71	Cinchas for steadying rifle carrier	.33	23.43
59	Currycombs	.36	21.24
76	Lariats	.57	43.32
37	Nosebags	1.22	45.14
74	Pockets, pommel, pairs	5.41	400.34
77	Shanks, halter, rope	.36	27.72
1	Socket, guidon and standard	....	.58
25	Spurs, enlisted men's, pairs	1.78	44.50
12	Stirrups (without leather) to be stained	.45	5.40
138	Straps, coat, double buckle	.33	45.54
210	Straps, coat, single buckle	.23	48.30
74	Straps, spur, lower	.06	4.44
74	Straps, spur, upper	.25	18.50
37	Straps, sweat-leather stirrup, pairs	3.38	125.06
72	Straps, stirrup	.81	58.32
121	Thongs	.14	16.94
	PART 1, CLASS 9, SECTION 6.		
	Officers' equipments and components.		
1,743	Attachments, hook, for garrison belts, model of 1910	.19	331.17
251	Attachments, hook, for saber belts	.18	45.18
19	Belts, saber, pigskin	3.85	73.15
31	Belts, saber, russet	2.92	90.52
4	Belts, shoulder, pigskin	2.68	10.72
2	Belts, shoulder, russet	1.83	3.66
1	Belt, waist, 43 inches over all	....	1.31
23	Bridles, halter, complete	7.49	172.27
1	Bridle, special	....	10.65
400	Buckles, wire, bronze, ⅝-inch, for leggings	.01	4.00
135	Buttons or studs for dispatch case, model of 1910	.02	2.70
11	Carriers, saber (C. E. B. model)	.70	7.70
1	Case, dispatch, model of 1909	....	5.68
746	Cases, dispatch, model of 1910	6.22	4,640.12
2	Cloth, pieces, with number "22" (Infantry), one for each corner	.48	.96
2	Cloth, pieces, with number "22" for service cloth, to be made of khaki canvas	.48	.96
1,743	Fasteners, sets, for garrison belts	.94	1,638.42
197	Figures for saddlecloths	.02	3.94
70	Headstalls, bridle, model of 1902	2.03	142.10
200	Hooks for leggings	.03	6.00
100	Hooks, saber attachment	.19	19.00
304	Hooks, snap, for saber belts	.56	170.24
3,156	Hooks, snap, for garrison belts	.46	1,451.76
3	Leathers, sweat, and stirrup straps, combined, pairs	5.16	15.48
1	Leggings, pigskin, pair	....	8.93
176	Letters, enameled leather	.03	5.28
2	Reins, bridle (snaffle and curb) special	.55	1.10
72	Reins, bridle, model of 1902	1.20	86.40
1	Rein, bridle, for halter bridle, combination	....	1.22
6	Rowels for spurs	.09	.54
227	Saddles, Whitman, complete	23.12	5,248.24
1	Saddletree, adjustable, covered, complete with seat and short skirt, felt pads, sweat leathers and stirrup straps, stirrups, hair cincha, coat straps (special)	....	107.06
125	Saddlebags	8.79	1,098.75

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles	Price.	Amount.
	PART 1. CLASS 9, SECTION 6—Continued.		
	Officers' equipments and components—Continued.		
75	Saddlecloths, dress, staff, without insignia	$6.45	$483.75
11	Saddlecloths, dress, Engineer Corps, without insignia	5.93	65.23
134	Saddlecloths, dress, infantry, cavalry, and artillery	5.10	683.40
12	Saddlecloths, dress, general officers, without insignia	7.90	94.80
1	Saddlecloth, dress, for General Staff Corps		6.45
1	Saddlecloth, dress, special, no insignia		5.09
1	Saddlecloth, service, reenforced with leather where cincha passes over it		5.14
1	Saddle, special, adjustable		37.47
200	Saddles, McClellan, complete	24.65	4,930.00
1,743	Slides for garrison belts, model of 1910	.12	209.16
330	Snaps, saber, for garrison belts, model of 1910	.56	184.80
1,002	Spurs	.55	551.10
7	Spurs, pairs (C. E. B. model)	1.79	12.53
25	Stirrups, wood, without hoods	.29	7.25
1	Strap, breast, special		4.98
752	Straps, spur, black	.62	466.24
2,002	Straps, spur, russet	.31	620.62
1	Tie, halter, special		.93
55	Trimmings, metal, sets, for saber belts	1.53	84.15
	Insignia for saddlecloths.		
	Dress:		
2	Adjutant General's Department	.59	1.18
2	Aid-de-camp to brigadier general	.92	1.84
122	Chaplain	.42	51.24
122	Coast Artillery Corps	1.30	158.60
2	Coat of arms	1.86	3.72
2	Engineer Corps	1.10	2.20
20	General Staff	2.01	40.20
2	Inspector General's Department	1.23	2.46
2	Judge Advocate General's Department	1.08	2.16
12	Aid-de-camp to major general	.92	11.04
2	Medical Department	.80	1.60
122	Medical Reserve Corps	.80	97.60
2	Ordnance Department	.58	1.16
2	Pay Department	.70	1.40
2	Quartermaster's Department	2.10	4.20
2	Signal Corps	1.14	2.28
2	Subsistence Department	.45	.90
2	Stars, large	.48	.96
4	Stars, small	.48	1.92
	Service:		
2	Adjutant General's Department	.41	.82
22	Aid-de-camp to brigadier general	.47	10.34
102	Coast Artillery Corps	.68	69.36
52	Engineer Corps	.98	50.96
50	General Staff	1.07	53.50
2	Inspector General's Department	1.00	2.00
2	Judge Advocate General's Department	.85	1.70
22	Aid de camp to major general	.47	10.34
402	Medical Department	.52	209.04
122	Medical Reserve Corps	.52	63.44
2	Ordnance Department	.41	.82
2	Pay Department	.42	.84
42	Quartermaster's Department	1.25	52.50
52	Signal Corps	.85	44.20
2	Stars, large	.42	.84
4	Stars, small	.41	1.64
2	Subsistence Department	.42	.84
	PART 1, CLASS 10, SECTION 1.		
	Arm chests, arm racks, etc.		
785	Boxes, packing, for bayonet scabbards	.66	518.10
1	Box, packing, special		23.14
2,080	Chests, arm, for caliber .30 rifle, model of 1903	4.42	9,193.60
396	Chests, artificer's, without contents, model of 1910	15.12	5,987.52
185	Chests for bayonets, model of 1905	2.16	399.60
100	Chests, company, for cleaning material (chests only)	1.79	179.00
1	Chest for officer's equipment		6.18
10	Chests, post, for spare parts, United States rifle, caliber .30, model of 1903	35.15	351.50
29	Chests for spare bayonets and appendages for 1,000 arms	2.60	75.40
47	Chests, packing, for spare parts for 1,000 arms	2.16	101.52
146	Chests, packing, for spare stocks	2.46	359.16
100	Lockers, arm, United States rifle, caliber .30, model of 1903	7.02	702.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 10, SECTION 1—Continued.		
	Arm chests, arm racks, etc.—Continued.		
50	Lockers, arm, caliber .38 revolver	$6.58	$329.00
79	Racks, arm, revolver	44.76	3,536.04
674	Racks, arm, model of 1908, for Colt's caliber .38 revolver, model of 1901, United States magazine rifle, model of 1903	23.37	15,751.38
350	Boxes, packing, No. 3, knocked down	2.38	833.00
700	Boxes, packing, No. 4, knocked down	2.10	1,470.00
525	Boxes, packing, No. 5, knocked down	1.19	624.75
	PART 1, CLASS 10, SECTION 2.		
	Fencing equipments.		
400	Blades, fencing saber	.39	156.00
10	Coverings, extra, for tips of fencing bayonets, model of 1909	.07	.70
12	Gloves, fencing, right hand, with cuff, made of Cremore horse leather	2.97	35.64
300	Gloves, fencing, right hand, without cuffs	1.37	411.00
200	Gloves, fencing, left	2.92	584.00
200	Gloves, fencing, left hand, without cuffs	1.37	274.00
	PART 1, CLASS 10, SECTION 3.		
	Intrenching tools and their carriers.		
4,400	Axes, hand	.45	1,980.00
3,192	Axes, hand, model of 1910	.45	1,436.40
1,757	Carriers, hand ax, model of 1910	.47	825.79
3,595	Carriers, pick mattock, model of 1910	.52	1,869.40
14,400	Carriers, shovel	.76	10,944.00
22,959	Carriers, shovel, model of 1910	.49	11,249.91
70	Carriers, tool (C. E. B. model)	1.31	91.70
3,186	Carriers, wire cutter, model of 1910	.19	605.34
100	Handles, hand ax	.13	13.00
200	Handles, pick mattock	.21	42.00
100	Handles, shovel	.11	11.00
245	Mattocks, pick	.51	124.95
1,672	Mattocks, pick, model of 1910	.56	936.32
3,030	Shovels	.48	1,454.40
7,615	Shovels, model of 1910	.48	3 655.20
	PART 1, CLASS 10, SECTION 4.		
	Marksman's insignia.		
27	Badges, distinguished marksman's	27.64	746.28
15	Badges, distinguished pistol shot	22.24	333.60
1,202	Badges, expert rifleman's, bronze	.49	588.98
3,504	Badges, expert rifleman's, silver	.70	2,452.80
4	Badges, gunner's, Coast Artillery	.86	3.44
1,004	Badges, gunner's, Field Artillery, first class	.67	672.68
4	Badges, gunner's specialists, Coast Artillery	.41	1.64
203	Badges, pistol expert, bronze	.61	123.83
2,000	Badges, pistol expert, silver	.57	1,140.00
302	Badges, sharpshooter's, bronze	.29	87.58
3,504	Badges, sharpshooter's, silver	.52	1,822.08
3	Badges, pistol sharpshooter's, bronze	.33	.99
569	Bars, for expert rifleman's badges, bronze	.12	68.28
425	Bars, for expert rifleman's badges, silver	.17	72.25
61	Bars, for pistol-expert badges, bronze	.55	33.55
32	Bars, bronze, for pistol sharpshooter's badges	.55	17.60
193	Bars, bronze, sharpshooter's badges	.55	106.15
1,585	Bars, for sharpshooter's badges, silver	.62	982.70
7,002	Marksman's pins, bronze	.14	980.28
7,504	Marksman's pins, silver	.31	2,326.24
504	Marksman's pins, silver, course "A"	.32	161.28
3	Pins. pistol marksmanship bronze	.12	.36
5	Plates, year	1.19	5.95
4	Shields	8.06	32.24
	PART 1, CLASS 10, SECTION 5.		
	Marking, etching, and stencil outfits.		
5	Etching outfits	4.70	23.50
	For etching outfits:		
10	Acid, 3-ounce bottle of	.12	1.20
16	Blotters for etching outfit ... per hundred	.04	.01
3	Boxes for stencils	.64	1.92
2	Chests	1.32	2.64
1,310	Stencils	.014	183.40

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No	Articles	Price.	Amount.
	PART 1, CLASS 10, SECTION 5—Continued		
	Marking, etching, and stencil outfits—Continued.		
68	Marking outfits, complete	$6.20	$390.60
	For marking outfits:		
6	Blocks, middle type	.95	5.70
1	Chest		1.06
22	Figures, loose type, sets of Nos. 0 to 9, inclusive	.43	9.46
42	Holders, stamp, with middle type block	.49	20.58
10	Letters	.11	1.10
44	Stamps	1.22	53.68
10	Sticks, inking	.06	.60
114	Outfits, stencil	2.12	241.68
1,584	Paste, stencil, boxes of	.11	174.24
3	Plates stencil, shell, and flame	1.43	4.29
2	Screws, thumb	.205	.41
100	Stamps, seal	8.65	865.00
1	Stamp, steel figure "2"		3.38
1	Stamp, steel, ⅜-inch, figure "2"		5.64
147	Stencils, canteen	.57	83.79
149	Stencils, haversack	.60	89.40
4	Stencils, headquarters property	.25	1.00
	PART 1, CLASS 10, SECTION 7.		
	Targets and target materials.		
1,226	Frames, 6 by 6, for Aiken standard targets	.86	1,054.36
631	Frames, 6 by 12, for Aiken standard targets	2.23	1,407.13
	For falling target G:		
32	Bolts, hook	.06	1.92
33	Figures, wooden	.20	6.60
4	Frames, base	.25	1.00
36	Hammers	.09	3.24
20	Parts, wooden, sets	1.44	28.80
50	Plates, hammer	.08	4.00
12	Receivers, target	.12	1.44
76	Screws, hammer supporting per hundred	.10	.08
17	Targets	1.44	24.48
10	Triggers	.09	.90
24	Uprights, target receiver	.06	1.44
	For beam disappearing target I:		
57	Beams	6.06	345.42
24	Eyes, screw for 1¾-inch stakes	.01	.24
1	Piece, beam connecting		.35
89	Stakes, 1¾-inch, without screw eyes	.16	14.24
124	Staves, center or operating	.33	40.92
	For sled target K, type A:		
42	Blocks, bottom	.30	12.60
42	Blocks, hinge	.67	28.14
50	Blocks, snatch, for ¾-inch rope	7.20	360.00
81	Sleds	7.64	618.84
52	Stakes, 2¾ inches square	.25	13.00
42	Staves, center or operating	.33	13.86
	For Laidley targets:		
40	Blocks, center or lever	.64	25.60
1,200	Frames, 4 by 6, light interior	.87	1,044.00
1,300	Frames, interior, 6 by 12	1.36	1,768.00
12	Rails, horizontal, for light interior frames, 4 by 6	.11	1.32
250	Rails, outer, 6 by 6, horizontal axis	.29	72.50
12	Rails, vertical, for light interior frames, 4 by 6	.15	1.80
400	Wedges, large	.02	8.00
1,200	Wedges, small	.01	12.00
	For rolling target M:		
2	Axles		4.92
4	Wheels		
60	Plates, fish, with bolts and nuts	.06	3.60
3	Stakes, 2¾ inches square	.25	.75
2	Track, sections, 14 feet long each	6.82	13.64
	For sliding target:		
100	Braces, corner	.18	18.00
40	Braces for timber frame supports	.32	12.80
380	Carriages, 6 by 6	2.93	1,113.40
100	Carriages, 6 by 12	6.90	690.00
750	Cord, sash, ⅜-inch pieces	.19	142.50
2,540	Frames, 6 by 6	1.32	3,352.80
600	Frames, 6 by 12	2.27	1,362.00
4	Irons, slide	.15	.60
150	Nuts for slide rods	.05	7.50
60	Posts	.71	42.60

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles	Price.	Amount.
	PART 1, CLASS 10, SECTION 7—Continued.		
	Targets and target materials—Continued.		
	For sliding target—Continued.		
1	Post, end for carriage, 6 by 6	$0.17	$0.17
30	Rails, vertical	.30	9.00
1	Rail for carriage, 6 by 6		.34
700	Rods, slide, 6 by 6 or 6 by 12	1.37	959.00
100	Sills cross	.63	63.00
10	Sills, main, 6 by 12	1.58	15.80
220	Supports, timber frame, 6 by 6	22.30	4,906.00
60	Supports, timber frame 6 by 12	22.30	1,338.00
40	Washers [illegible]-inch	.01	.40
140	Washers, [illegible]-inch	.01	1.40
	For texas revolving targets, 6 by 6 feet:		
4	Blocks, center guide	.15	.60
4	Blocks, lock	.20	.80
8	Blocks, side guide	.08	.64
4	Bolts lock block	.02	.08
8	Disks	.10	.80
4	Pieces, cross	.15	.60
16	Rails, horizontal, for target frame	.31	4.96
16	Rails, vertical, for target frame	.35	5.60
16	Wedges, large	.04	.64
16	Wedges, small	.01	.16
300	Bells for gallery practice target, 50-foot range	.46	138.00
300	Disks, marking, 10 inches, sets	.37	111.00
100	Disks and staves, marking, short range	.68	68.00
148	Disks and staves, marking, mid range	1.00	148.00
300	Disks and staves, marking, long range	1.45	435.00
200	Disks and staves, marking, for revolver practice	.54	108.00
24	Disks, marking, mid range	.66	15.84
800	Flags, danger	.83	664.00
500	Flags ricochet	.74	370.00
250	Flags, streamer	6.09	1,522.50
66,204	Pasters target, buff and black, envelopes of (1,000 in each envelope) ... per thousand	.04	2.65
8,000	Pasters, olive drab, packages ... do	.03	.24
1,300	Staves for marking disks short range	.30	390.00
70	Staves for marking disks, mid range	.31	21.70
116	Staves for marking disks, long range	.32	37.12
3,120	Staves for target F	.12	374.40
3,400	Staves for target E	.17	578.00
1	Target, model miniature, as recommended by School of Musketry		26.23
7,080	Targets, pasteboard, F, prone	.07	495.60
100,000	Targets, paper, A ... per thousand	30.78	3,078.00
50,400	Targets, paper, B ... do	39.58	1,994.83
30,400	Targets, paper, C ... do	69.58	2,115.23
35,000	Targets, paper, D ... do	38.68	1,353.80
5,110	Targets, pasteboard, E, kneeling ... per hundred	12.39	633.13
1	Target, model, H		.86
450	Targets, paper, N	.04	18.00
308,000	Targets, paper, X ... per hundred	.04	123.20
60,000	Targets, paper, Y ... per thousand	2.87	172.20
70,000	Targets, paper, Z ... do	2.72	190.40
100	Uprights, pipe	.44	44.00
	PART 1, CLASS 10, SECTION 9.		
	Blacksmith's tools.		
94	Anvils, 17½ pounds	10.93	1,027.42
178	Aprons, leather	1.65	293.70
8	Bags, canvas, for small stores	.83	6.64
1	Bellows with handle		7.25
95	Blocks, anvil, for cavalry	4.71	447.45
4	Boxes, shoeing, leather	1.73	6.92
60	Buckets, iron	1.05	63.00
85	Chests, anvil	6.86	583.10
25	Chests for anvil and block	7.95	198.75
4	Chests, artificer's, without contents, model of 1910	15.12	60.48
120	Chests, forge	10.72	1.286.40
4	Forges and bellows	17.92	71.68
4	Kits, tool	1.40	5.60
70	Knives, toe	.72	50.40
70	Rakes, fire	.32	22.40
50	Punches, fore, and creasers	2.34	117.00
100	Punches nail	.33	33.00
85	Vises for forge	10.02	851.70
93	Wrenches, forge	.78	72.54

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 10, SECTION 9—Continued.		
	Saddler's tools.		
399	Awls, eyelet, and sets, for putting eyelets in belt	$0.73	$291.27
22	Bags, tool (Col. Whitmore's design)	29.53	649.66
30	Bags, tool, leather	29.53	885.90
104	Cases, needle	.19	19.76
47	Clamps, stitching	1.41	66.27
32	Horses, stitching	7.31	233.92
26	Palms, sewing	.72	18.72
2	Sets, grommet, special	.17	.34
1	Socket for stitching-horse clamp		.74
	PART 1, CLASS 10, SECTION 10.		
	Cleaning materials, paints, etc.		
9,448	Brushes, button	.32	3,023.36
1,434	Cans, pint, for linseed oil	.14	200.76
71	Chests, complete with contents, company, for cleaning material	5.78	410.38
250	Chests, company, for cleaning material (chests only)	1.79	447.50
2,656	Dressing, russet leather, boxes of	.24	637.44
2,156	Material, scouring, boxes of	.27	582.12
400	Oil, sperm, pints, in tin cans	.26	104.00
4,000	Paint, black, pounds, Q. D., in 5-pound cans	.22	880.00
25	Paint, blue, pounds, ¼-pound cans	1.03	25.75
700	Paint, brown, pounds, for steel horse collars, 2-pound cans	.23	161.00
9,450	Paint, olive drab, pounds, second coat, 5-pound cans	.13	1,228.50
18,500	Paint, olive drab, pounds, third coat, 5-pound cans	.11	2,035.00
12½	Paint, vermilion, pounds, ¼-pound cans	1.04	13.00
1,650	Paint, vermilion, pounds, ground in oil, 5-pound cans	.16	264.00
25	Paint, white, pounds, ¼-pound cans	.54	13.50
1,000	Paint, white, pounds, Q. D., in 5-pound cans	.11	110.00
1,500	Plates, cleaning	.06	90.00
9,448	Sticks, button	.09	850.32
3,812	Whiting, boxes	.22	838.64
	Hardware.		
1,145	Buckles, bridle, ½-inch	.02	22.90
13,098	Buckles, brass wire, ¾-inch ... per hundred	1.21	158.49
5,300	Buckles, brass bar, ½-inch	.03	159.00
18,632	Buckles, brass bar, ¾-inch, Saalbach	.03	558.96
41,200	Buckles, brass bar, ⅝-inch	.03	1,236.00
12,224	Buckles, brass bar, ⅞-inch	.03	366.72
24	Buckles, bar, 1-inch	.04	.96
736	Buckles, 1-inch	.18	132.48
1,288	Buckles, bar, 1-inch, Saalbach	.04	51.52
32,000	Buckles, brass wire, ⅝-inch	.01	320.00
36	Buckles, 1¼-inch, stirrup strap	.19	6.84
300	Buckles, bar, 1⅜-inch	.15	45.00
3,000	Hooks, brass wire end ... per hundred	.33	9.90
90	Rings, D, ½-inch	.02	1.80
281	Rings, D, ⅝-inch	.01	2.81
1,200	Rings, bronze, ⅞-inch	.02	24.00
10,824	Rings, 1¼-inch	.03	324.72
12	Rings, 1⅝-inch, bronze	.03	.36
17,860	Rings, iron, 4-inch, bronzed	.03	535.80
	Miscellaneous articles.		
1	Board, display, of marksman's insignia		25.16
1	Box, pine		23.20
77	Bags, grain (C. E. B. model)	.26	20.02
168	Cinchas, sets, for dummy packs	1.88	315.84
1	Desk		85.40
1	Desk, field, no contents or typewriter (C. E. B. model)		23.35
22	Decks, field, model of 1909, complete with contents, except typewriters	75.90	1,669.80
1	Devices, locking, set of, for machine guns, special (Hensley design)		32.51
1,665	Forage, compressed, bales of	5.25	8,741.25
1	Harness, set of, for use of Signal Corps, special		80.95
336	Packs, dummy	3.77	1,266.72
100	Name plates, brass (for West Point)	.10	10.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Rock Island Arsenal, Ill.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 10, SECTION 10—Continued.		
	Test tools.		
	For 6-inch Howitzer carriage, model of 1908 .... lot..	....	$2,079.67
	1 brake beam, No. 1.		
	2 clutch teeth.		
	1 cradle, No. 7.		
	1 cradle, No. 8.		
	1 cradle head, No. 1.		
	1 cylinder liner, No. 9, front head.		
	1 cylinder liner, No. 9, rear head.		
	1 elevating worm bevel gear, No. 1, key.		
	1 elevating worm bevel gear, No. 1.		
	1 pinion shaft, No. 1.		
	4 plugs, 0.7595–0.7495-inch.		
	2 spades, No. 2.		
	2 square plugs, 0.499-inch.		
	2 square plugs, 0.624-inch.		
	2 square plugs, 1.124-inch.		
	2 square rings, 0.498-inch.		
	2 square rings, 0.623-inch.		
	2 square rings, 1.121-inch.		
	2 top carriages, No. 1.		
	1 recoil valve, No. 8, rear head.		
	1 recoil valve, No. 9, Mx. port gauge.		
	1 recoil valve, No. 9, 0.477-inch gauge.		
	1 recoil valve, No. 8, front head.		
	1 recoil valve, No. 8, and cylinder liner, No. 9, gauge.		
	1 recoil valve, No. 8, and cylinder liner, No. 9, shaft with 2 nuts.		
	1 recoil valve, No. 9, 1.249–1.47-inch length gauge.		
	1 recoil valve, No. 9, 0.734-inch gauge.		
	1 recoil valve, No. 9, 0.588–0.919-inch length gauge.		
	1 recoil valve, No. 9, 0.955–1.065-inch length gauge.		
2	Sets of test tools (280 pieces) for reel, model of 1909	....	5,477.96
1	Set of test tools for cart, model of 1909	....	
	Total	....	1,739,752.13

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1.		
	For 8-inch barbette carriage, model 1892.		
2	Taper pins	$1.55	$3.10
	For 8-inch disappearing carriage, model 1894.		
12	Bolts, roller dust guard joint plates	.25	3.00
1	Eyebolt	....	3.35
2	Rollers for traversing wheels	.75	1.50
6	Retaining springs, traversing crank	10.25	61.50
6	Gaskets, cylinder head, rear	....	4.50
6	Gaskets, cylinder head, front	....	
36	Gaskets, pipe connections	....	1.55
3	Gaskets, emptying coupling	....	
2	Sets traversing roller bearings	28.20	56.40
	For 8-inch disappearing carriage, model 1896.		
1	Counterweight bottom plate	....	137.05
2	Cross-head pawl stops with bolts	8.60	17.20
8	Gaskets, cylinder head	.35	2.80
2	Elevating screw, ball bearings	4.80	9.60
2	Keys, elevation disk	1.40	2.80
5	Pieces pipe for standard platform guard rail	....	2.65
1	Tee for standard platform guard rail	....	
4	Brass strips	.95	3.80
1	Handle for bolt for maneuver lever	....	1.25
1	Azimuth pointer	....	4.30
1	Leveling screw	....	8.50
1	Pawl safety-latch fulcrum	....	5.05
4	Nuts for gunner's platform	.75	3.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 8-inch disappearing carriage, model 1896—Continued.		
	ACCESSORIES.		
1	Wrench, spanner, for stuffing box		$15.15
2	Wrench connections	$1.25	2.50
	FOR AMMUNITION TRUCKS, COMMON TO ALL MODELS.		
1	Caster		30.15
1	Handle		7.60
2	Rear frames	2.40	4.80
1	Wheel, elevating		9.00
1	Brake shoe		1.50
	For 8-inch guns, common to all models.		
14	Adaptors for scrapers	3.00	42.00
18	Brushes, cleaning, wire	15.50	279.00
59	Rammer staves	4.75	280.25
59	Rammer heads	12.60	743.40
53	Sponge staves E	4.00	212.00
52	Sponge staves B	2.20	114.40
53	Sponge heads, bore	9.18	486.54
2	Slush brushes, experimental	50.40	100.80
2	Scrapers	9.35	18.70
15	Sockets, steel, for slush-brush handles	1.10	16,50
	For 10-inch guns, model 1888.		
3	Lanyard extensions	2.60	7.80
	For 10-inch guns, model 1895.		
3	Lanyard extensions	2.60	7.80
	For 10-inch disappearing carriage, model 1894.		
4	Hauling-down ropes	6.25	25.00
1	Section-front equalizing pipes		15.00
2	Sight-standard gibs	3.40	6.80
1	Clamp screw, upper-sight standard		2.20
2	Countershafts	27.25	54.50
2	Pinions	16.15	32.30
	For 10-inch disappearing carriage, model 1894 M1.		
3	Firing leaf cords	1.20	3.60
1	Filler piece		3.20
5	Retraction ropes	9.00	45.00
4	Brass strips	.85	3.40
	For 10-inch disappearing carriage, model 1896.		
1	Bolt, maneuvering lever lock		7.45
6	Cross-head pawl stops	.65	3.90
2	Firing cables ground on gun to safety firing switch	17.70	35.40
1	Safety firing switch to primer		5.50
74	Sets terminal attachments	2.20	162.80
2	Insulations, firing pistol	1.15	2.30
12	Handles with nuts for battery boxes	1.45	17.40
2	Blocks for firing switch on top carriage	1.50	3.00
1	Retraction-rope pulley with bushing and oil plug		15.75
10	Gaskets, cylinder head, rear		6.25
10	Gaskets, cylinder head, front		
50	Gaskets, for pipe connections		2.90
5	Gaskets, for emptying plug		
1	Sight standard ladder brace (upper and lower)		2.55
14	Sight standard ladder braces, upper	2.60	36.40
14	Sight standard ladder braces, lower	.80	11.20
12	Copper terminals		14.65
24	Nuts for terminals		
1	Catch for retraction crank		12.70
6	Bolts (leveling screws)	4.20	25.20
1	Set screw for subcaliber loading platform		3.90
4	Cords, firing leaf, for lanyard attachment	.40	1.60
6	Strips, brass, for throttling bars	.75	4.50
3	Retraction ropes	8.40	25.20
5	Counterweights	.55	2.75
1	Safety firing switch		5.50
2	Set screws	4.70	9.40
2	Pawl buffer brackets with fulcrum plungers	56.00	112.00
5	Washers, ball bearing	13.30	66.50

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 10-inch disappearing carriage, model 1901.		
1	Gasket, rubber, for azimuth indicator		$1.85
4	Gaskets, pipe connection	$0.60	2.40
8	Gaskets, rear, cylinder head	.60	4.80
1	Set flexible conduits, firing circuit		8.70
2	Elevating handwheel shaft brackets with bushings and oil plugs	32.50	65.00
1	Traversing pinion shaft		18.20
2	Sets electrical equipment, 220-volt circuit	506.30	1,012.60
2	Ropes, counterbalance device	2.00	4.00
2	Sets (428) screws, floor plate	19.40	38.80
4	Bolts, with nuts for platform ladder	.40	1.60
4	Lids	4.10	16.40
4	Pins	.25	1.00
4	Coamings	10.95	43.80
4	Fillers, coaming	8.60	34.40
8	Screws, countersunk	.90	7.20
1	Decimal hand intermediate pinion		15.00
4	Gaskets for covers to observation holes in racer	6.00	24.00
	For ammunition trucks.		
3	Braces, shot tray handle	4.20	12.60
12	Brake shoes, right and left	7.35	88.20
2	Brake shafts	6.60	13.20
262	Buffers, hydraulic	28.00	7,336.00
3	Casters	26.90	80.70
2	Caster forks	19.10	38.20
4	Caster wheels	9.55	38.20
5	Caster ball bearings	17.90	89.50
1	Elevation screw, shot tray		36.20
2	Front frames	12.10	24.20
1	Filler piece, shot tray		5.65
4	Stops, bronze	1.70	6.80
6	Springs, operating lever	1.85	11.10
17	Top plates with bushings	25.50	433.50
3	Shot trays	15.45	46.35
2	Tipping arms	25.15	50.30
13	Yokes, caster, with bushings	14.85	193.05
	Implements for 10-inch guns, common to all models.		
29	Adapters for scrapers	3.00	87.00
1	Brush, slush, experimental		9.35
18	Brushes, wire, cleaning	15.15	272.70
4	Hooks, counterweight	1.35	5.40
64	Rammer heads	9.05	579.20
115	Rammer staves	5.00	575.00
162	Sponge staves, E	4.25	688.50
82	Sponge staves, B	2.30	188.60
82	Sponge heads, bore	8.35	684.70
37	Sockets for slush brush heads	2.25	83.25
1	Pair shot tongs		29.35
	For 12-inch barbette carriage, model 1892.		
112	Tap bolts	.15	16.80
56	Braces	1.90	106.40
56	Tap bolts with rivets	.10	5.60
1	Crane mast, upper bearing strap		23.65
2	Bronze screws	.65	1.30
2	Bolts with nuts	2.05	4.10
1	Bronze bushing		9.85
28	Chassis sight standard	15.70	439.60
28	Steel angles	.80	22.40
10	Retraction ropes	9.00	90.00
2	Studs for traversing bevel gear	14.75	29.50
4	Gaskets for filling plugs	.15	.60
2	Traversing crank fastenings	3.55	7.10
2	Retracting crank fastenings	1.50	3.00
	For 12-inch altered gun-lift carriage.		
2	Throttling pipes	1.90	3.80
2	Couplings	8.50	17.00
2	Followers	.10	.20
4	Gaskets		6.90
4	Collars		
4	Rings		
1	Set gaskets, large, copper		6.30

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 12-inch gun, model 1895, M1.		
1	Rotating stop with 2 screws		$90.85
2	Studs for safety bar slide	$1.65	3.30
	For 12-inch disappearing carriage, model 1896.		
1	Set electrical equipment		843.10
2	Retraction ropes with loops	19.80	39.60
4	Gaskets, cylinder head, front		4.25
4	Gaskets, cylinder head, rear		
20	Gaskets for pipe connections		1.00
4	Gaskets, filling plugs		
1	Gun lever, left		1,419.40
1	Loop for retraction rope		3.50
1	Terminal for firing cable		1.45
	For 12-inch disappearing carriage, model 1897.		
4	Suspension rod bolts, subcaliber platform	1.75	7.00
1	Fiber washer for rheostat		1.25
2	Lever base safety firing switches with 3 tap bolts	9.40	18.80
1	Firing cable from ground on gun to safety firing switch		13.25
1	Firing cable for primer to safety firing switch		21.10
2	Sets conduits for firing circuit	32.90	65.80
1	Bronze bushing		2.05
1	Latch, throttling valve		3.20
3	Cords, firing leaf, for lanyard attachment	.45	1.35
11	Screws, platform floor plates	.40	4.40
1	Ammunition truck		888.10
	For 12-inch disappearing carriage, model 1901.		
1	Pawl buffer block		18.25
4	Gaskets, cylinder head	.40	1.60
8	Gaskets, filling plug		1.00
20	Gaskets for pipe connections		
1	Flexible conduit for firing circuit		26.85
1	Elevation disk		126.65
2	Junction boxes with cover tap bolts and gaskets	6.50	13.00
3	Cords, firing leaf, lanyard attachment	.75	2.25
1	Device for checking lever of base rings		24.75
1	Rack, C. I		78.55
8	Coamings	7.60	60.80
72	Screws, countersunk	.15	10.80
8	Lids	2.30	18.40
8	Pins	.20	1.60
	ACCESSORIES.		
1	Screwdriver, double		3.95
1	Wrench, spanner, for stuffing box		15.70
	FOR AMMUNITION TRUCKS.		
5	Bushings, caster wheel	1.70	8.50
3	Bushings, truck wheel	2.00	6.00
2	Brake shoes	1.50	3.00
4	Brake levers	7.90	31.60
6	Brake lever guides	8.10	48.60
28	Casters	46.60	1,304.80
9	Caster forks	37.90	341.10
8	Caster wheels	5.85	46.80
5	Sets caster wheel pins with split pins		11.35
50	Felt packing, axle bearing	.28	14.00
12	Handles	1.15	13.80
6	Oil hole plugs	.45	2.70
20	Securing screws	.25	5.00
6	Stops	2.85	17.10
6	Pairs shot truck stops with braces	8.45	50.70
12	Tray supports	17.60	211.20
9	Tipping arms	24.30	218.70
12	Tipping nut trunnions	1.25	15.00
	Implements for 12-inch guns, common to all models.		
18	Brushes, wire, cleaning	21.00	378.00
2	Brushes, slush	15.00	30.00
109	Rammer heads	10.50	1,144.50
110	Rammer staves	6.35	698.50

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1 SECTION 1—Continued.		
	Implements for 12-inch guns, common to all models—Continued.		
59	Sponge heads, bore	$8.40	$495.60
168	Sponge staves, E	3.90	655.20
83	Sponge staves, B	2.45	203.35
25	Sockets for slush brush handles	2.25	56.25
29	Adaptors for scrapers	3.00	87.00
6	Scrapers	8.00	48.00
	For 14-inch disappearing carriage, model 1907.		
1	Rear clip and retraction crank shaft support		773.40
1	Pair gun levers with bronze bushings		3,225.00
60	Steel bolts	.15	9.00
1	Set (12) counterweights, lead		1,400.00
1	Back gear with 1 bushing		21.30
1	Elevation clutch		40.00
1	Elevation arm		325.00
1	Top carriage		2,100.00
1	Electric breech opener		1,836.60
2	Retraction ropes	45.00	90.00
1	Clip base for safety firing switch		40.00
1	Bracket, right		285.00
1	Bracket, left		285.00
4	Yoke connections		55.20
2	Vertical guide keys		
10	Bolts		53.60
10	Round nuts		
26	Retracting rack screws	2.10	54.60
4	Spring cylinder heads	13.87	55.48
4	Heads for tubes	3.50	14.00
2	Pins, taper	1.35	2.70
2	Firing cables	8.00	16.00
1	Truck wheel (for ammunition truck)		40.00
	IMPLEMENTS.		
7	Cleaning brushes, wire	24.40	170.80
10	Cross handle screwdrivers	3.00	30.00
1	Sponge head with cover		64.30
	ACCESSORIES.		
1	Wrench for lower cylinder head for 14-inch disappearing carriage, model 1907		82.40
	For 14-inch gun turret, model 1909.		
2	Hoist buffer pads right and left	50.00	100.00
	For 2.24-inch 6-pounder R. F. guns.		
	IMPLEMENTS.		
1	Cover for bristle sponge		2.70
10	Brushes, cleaning, wire	3.40	34.00
9	Sponge heads, with stave B	1.05	9.45
9	Staves C	.55	4.95
8	Scrapers, steel, with sockets	4.00	32.00
10	Slush brushes	6.88	68.80
	ACCESSORIES.		
2	Tools, trigger pin	1.65	3.30
4	Wrenches, firing pin head	12.75	51.00
1	Pin punch		1.35
	For 15-pounder masking parapet, model 1898.		
18	Hose, rubber, for shoulder pieces	2.90	52.20
6	Washers, leather, for cylinders, lead	.55	3.30
3	Bearings, worm thrust	3.35	10.05
1	Pivot clamping lever		29.25
1	Pocket chain wheel		6.80
2	Shield braces, upper, with 4 nuts and 4 split pins	25.50	51.00
2	Shield braces, lower, with 4 nuts and 4 split pins	26.50	53.00
4	Buffers for counter recoil stops	2.00	8.00
1	Spring for lifting ratchet		1.80
1	Shoulder rest		7.05

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	Part 1, Class 1, Section 1—Continued.		
	For 15-pounder barbette carriage, model 1902		
1	Spring for deflection wheel of sights and screws		$28.00
4	Lamps with cable attachment	$4.95	19.80
2	Screws	.30	.60
4	Lamp sockets for night sights	.65	2.60
6	Gaskets, cylinder head		8.90
12	Gaskets, filling and drain plug		
6	Gaskets, throttling rod		
	For 15-pounder barbette carriage, model 1903.		
30	Filler pieces	1.10	33.00
1	Clamp with screws		2.45
5	Sets gaskets, cylinder head	.25	1.25
2	Sets gaskets, cylinder head	.50	1.00
8	Gaskets drain-plug gear cover	.15	1.20
8	Gaskets, filling and drain plug	.10	.80
36	Steel pins for drum case	.15	5.40
36	Split pins for drum case		.06
72	Steel rivets for drum clamp	.05	3.60
114	Spring covers	.10	11.40
2	Screws, fillister head		9.90
1	Rubber socket bushing		
1	Switch extension		
1	Junction box with 2 tap bolts		
2	Washers, felt	.65	1.30
	For (3-inch) 15-pounder rapid-fire guns, common to all models.		
4	Scrapers	11.35	45.40
26	Slush brushes	4.50	117.00
6	Sponge staves, "C"	1.50	9.00
4	Sponge covers	1.40	5.60
	ACCESSORIES.		
1	Wrench, double, for pivot clamp lever, set screw, and filling plug		4.35
	For 4-inch Driggs-Schroeder rapid-firing guns.		
2	Drain plugs, cylinder	1.55	3.10
	IMPLEMENTS.		
2	Sponge rods	6.75	13.50
2	Wire cleaning brushes	12.00	24.00
	For 4.72-inch rapid-firing guns, Armstrong.		
2	Rubber tubes for shoulder pieces	10.35	20.70
2	Gaskets throttling-bar bolt	.40	.80
2	Alternate firing keys and cables	36.60	73.20
1	Electrical pin plug		1.40
1	Wing nut		1.15
2	Pieces rubber tubes for shoulder rests	6.05	12.10
	IMPLEMENTS.		
33	Rammer heads	10.00	330.00
6	Sponge staves, "E"	.95	5.70
6	Sponge staves, "B"	.55	3.30
33	Rammer staves	4.00	132.00
5	Scrapers	15.60	78.00
3	Slush brushes	10.00	30.00
1	Sponge head		26.00
24	Wiring, cleaning brushes	9.00	216.00
4	Adaptors for scrapers	3.00	12.00
2	Sockets for slush brushes	2.25	4.50
	For 5-inch barbette carriage-balance pillar mount, model 1896.		
5	Shoulder-rest rubber tubes	3.85	19.25
4	Eyebolts with chains	2.10	8.40
1	Ratchet wheel for ratchet lever		13.25
2	Gaskets, filling plug	.10	.20
2	Gaskets, emptying	.10	.20
1	Wrench, single, for stuffing box		27.75

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price	Amount.
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 5-inch barbette carriage, model 1908.		
2	Sets gaskets	$1.15	$2.30
2	Filling plugs	1.90	3.80
3	Handles for battery boxes	7.60	22.80
	For 5-inch rapid-firing guns, common to all models.		
16	Sponge staves E	1.10	17.60
16	Sponge staves, B	.70	11.20
36	Rammer staves	2.90	104.40
1	Scraper		5.05
37	Rammer heads	6.20	229.40
1	Slush brush	7.50	7.50
1	Sponge head, experimental		78.70
12	Sockets for slush brush	2.25	27.00
	For 6-inch barbette carriage, model 1910, pilot.		
1	6-inch barbette carriage, model 1910, pilot		14,749.25
	TOOLS AND ACCESSORIES.		
1	Wrench box, for 5-inch nuts		5.40
1	Wrench, single, piston rod nuts and gland (U43AB)		15.95
1	Wrench, spanner, recoil cylinder liner (U55M)		23.70
1	Wrench, spanner, traversing worm bearing (U55M)		23.70
4	Shot (ammunition) trucks	250.00	1,000.00
	For 6-inch disappearing carriage, model 1898.		
2	Retraction ropes with 'oops	7.70	15.40
1	Spring, lanyard-pawl		2.15
1	Spring, clutch		2.85
1	Reflector		5.15
1	Safety-latch stop		2.05
1	Pawl stop		6.00
	For 6-inch barbette carriage, model 1900.		
1	Spring bolt, with washer	7.65	7.65
2	Hexagonal nuts	5.65	11.30
2	Split collars with screws	10.00	20.00
12	Handles for battery box with bushing	.65	7.80
3	Sets gaskets, cylinder head	.25	.75
1	Battery box		50.00
1	Buzzer board for firing pistol		15.90
	For 6-inch disappearing carriage, model 1903 and 6-inch gun, model 1903.		
4	Tap bolts	.20	.80
1	Bracket, reinforced with 2 screws and keys	49.10	49.10
24	Bolts, throttling-bar, with washers	1.15	27.60
3	Disks for buffer valve	8.25	24.75
2	Firing cables for primer to safety firing switch	13.85	27.70
2	Subcaliber-range scales		27.55
2	Service-range scales		
2	Service-range pointers, with 4 screws and 2 dowels		19.00
1	Subcaliber-range pointer, with 4 screws and 2 dowels		
15	Retraction ropes	18.05	270.75
40	Pawls crosshead, right		1,611.80
40	Pawls, crosshead, left		
100	Bushings for crosshead pawls	.47	47.00
200	Pins for bronze bushings	.01	2.00
100	Oil plugs for crosshead pawls	.08	8.00
50	Spring studs for crosshead pawls	.50	25.00
50	Springs, pawls	.65	32.50
4	Retaining crank fasteners, for traversing cranks	1.45	5.80
1	Set conduit for firing circuit		30.20
8	Gaskets, cylinder head, rear	.25	2.00
100	Gaskets, for pipe connections	.03	3.00
10	Gaskets for filling plugs	.03	.30
36	Gaskets for drain plugs	.25	9.00
3	Sets gaskets, cylinder head, complete	.25	.75
56	Throttling bar bolts	.40	22.40
2	Sets fastenings for traversing crank	4.35	8.70
2	Sets fastenings for retaining crank	4.35	8.70
1	Clip left, for safety firing switch		1.05
12	Elevation pointers, with 36 screws, brass	.65	7.80
1	Latch for throttling valve		4.35

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 6-inch disappearing carriage, model 1903, and 6-inch gun, model 1903—Continued.		
1	Buffer valve		$90.25
1	Nut for spring shaft		.10
2	Retracting crank fasteners	$2.55	5.10
80	Pawl stops	.45	36.00
80	Pawl spring studs	.15	12.00
6	Electric lamp guards	6.20	37.20
6	Lamp springs	.15	.90
18	Wire, cleaning brushes	9.75	175.50
2	6-inch disappearing carriages, model of 1905 M1, complete except sights.	18,409.60	36,819.20
	For 6-inch disappearing carriage, model 1905 and 1905 M1.		
14	Retracting clutch sleeves	18.70	261.80
2	Retracting clutch shafts	53.00	106.00
2	Cylinder head gaskets	1.15	2.30
2	Sets flexible conduit for firing circuit	19.20	38.40
11	Coamings		100.10
132	Screws, countersunk		
11	Lids		
11	Pins		
	ACCESSORIES.		
19	Extractors (U67G), with screws	5.22	99.18
19	Extractors (U67H)	4.45	84.55
19	Extractor yokes	2.75	52.25
4	Counterweight hooks	.65	2.60
4	Traversing roller hooks	.75	3.00
4	Pinch bars	1.10	4.40
2	Wrenches, throttling valve, and nut	2.50	5.00
2	Wrenches, screw driver and socket	3.75	7.50
2	Wrenches, spanner, for follower	8.25	16.50
	Implements, 6-inch guns, common to all models.		
1	Sponge head		26.00
28	Sponge staves, E	.90	25.20
14	Sponge staves, B	.50	7.00
2	Scrapers	9.15	18.30
67	Rammer heads	11.00	737.00
48	Rammer staves	6.00	288.00
4	Slush brushes	7.50	30.00
59	Sockets, for slush brush handles	2.25	132.75
49	Adaptors, with nuts for slush brushes	3.50	171.50
	ACCESSORIES.		
8	Shot trucks	250.00	2,000.00
14	Pairs shot tongs	8.50	119.00
6	Handles, for shot trucks	1.10	6.60
	PART 1, CLASS 1, SECTION 3.		
	For 12-inch mortar, model 1890 M1.		
18	Bronze screws	.25	4.50
6	Bronze washers	3.10	18.60
1	Ground connection for firing cable		6.70
	For 12-inch mortar carriage model 1891.		
8	Buffer blocks	.50	4.00
	For 12-inch mortar carriage, model 1896 M1 and 1896 M11.		
	For azimuth index lamp:		
1	Lid		11.00
1	Hinge pin with 3 screws		2.85
1	Angle plate		20.70
16	Separators	.15	2.40
5	Spring compressor screws	6.55	32.75
5	Spring compressor nuts	1.30	6.50
5	Spring compressor washers	2.30	11.50
16	Straps, steel, for handwheel handle	.75	12.00
7	Stops, adjustable	1.00	7.00
1	Spring guide rod plug		2.95
64	Bolts for lanyard pulley bracket	.25	16.00
32	Bolts, tap, for elevation locks	.10	3.20

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles	Price.	Amount.
	PART 1, CLASS 1, SECTION 3—Continued.		
	For 12-inch mortar carriage, model 1896 M1 and 1896 M11—Continued.		
5	Pins, brake link, upper, with split pins	$0.31	$1.55
11	Pins, brake link, upper, for traversing brakes	.30	3.30
80	Collars for elevation locks	2.20	176.00
80	Pins, taper	.70	56.00
80	Pins, split	.02	1.60
32	Straps for elevating handwheels	1.20	38.40
16	Straps for elevating locks	1.20	19.20
40	Grease cups	3.50	140.00
32	Plugs, filling	1.00	32.00
48	Plugs to replace equalizing pipes	1.00	48.00
1	Core hole cover		8.75
4	Core hole cover screws		
1	Coupling, emptying, for equalizing pipes		13.20
5	Drums	5.65	28.25
4	Elevation stops and stop screws	6.30	25.20
1	Fixture for truing traversing racks		80.50
	For recoil cylinders:		
2	Cylinder heads	41.00	82.00
4	Packing rings	4.75	19.00
4	Followers	3.55	14.20
2	Filling plugs	1.30	2.60
1	Base (T22A A1)		7.95
1	Drum (P22N1)		9.65
1	Bushing (T22Z2)		.75
2	Nipples (P45C1)	.35	.70
2	Bushings (P39Z2)	8.65	17.30
6	Pedestal brackets	109.30	655.80
1	Bracket, vertical traversing shaft with bushings		12.15
5	Brackets, elevating intermediate pin with bolts and nuts	8.00	40.00
3	Bases, housing, for 360° contact	5.50	16.50
128	Bolts	.55	70.40
28	Sets gaskets for cylinder head	.55	15.40
32	Sets gaskets for recoil cylinders	.60	19.20
8	Sets gaskets for cylinder heads, front	.75	6.00
42	Sets gaskets for equalizing pipes	.10	4.20
	For 12-inch mortar carriage, model 1896 M1.		
	For elevating handwheels:		
4	Stems	3.95	15.80
4	Sleeves with washers	1.50	6.00
4	Straps with washers and nuts	1.05	4.20
1	Stud to secure trunnion cap		1.95
332	Bolts, tap	.10	33.20
2	Bolts, lifting, for stuffing-box packing rings	.90	1.80
1	Bolt for vertical traversing shaft		1.80
32	Gaskets, copper, large	.50	16.00
160	Gaskets, copper, small	.08	12.80
32	Gaskets, lead, large	.10	3.20
160	Gaskets, lead, small	.06	9.60
48	Elevation lock levers with bolts	2.60	124.80
32	Castings of pistons	3.00	96.00
32	Cylinder plugs, large	1.15	36.80
160	Cylinder plugs, small	.33	52.80
16	Pins	.15	2.40
8	Azimuth pointers	3.30	26.40
32	Azimuth pointer screws and dowels	.50	16.00
50	Bolts, tap	.20	10.00
12	Bolts for pedestal bracket	1.20	14.40
1	Bracket for vertical shaft		18.90
1	Bracket for elevation quadrant	20.45	20.45
12	Bolts, dripping pan	.25	3.00
8	Fulcrum bolts	.40	3.20
84	Bolts with nuts	.20	16.80
15	Bolts, tap, for cover to pedestal	.15	2.25
128	Bolts for floor plates	.25	32.00
30	Bolts for dust guard to racer	.15	4.50
4	Bronze bushings for clamp on handwheel	4.15	16.60
7	Floor plates, outside	5.85	40.95
51	Floor plates, removable	10.00	510.00
1	Follower for pipe connection		.75
32	Filler disks for core hole	2.65	84.80
4	Elevating handwheel handles	6.65	26.60
1	Elevating handwheel spoke		1.05
3	Elevation racks	122.90	368.70
72	Steel disks	.50	36.00
2	Equalizing pipe followers	3.60	7.20

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 3—Continued.		
	For 12-inch mortar carriage, model 1893 M1—Continued.		
4	Filler pieces	$0.25	$1.00
2	Emptying couplings	8.20	16.40
1	Set electric circuits		837.40
2	Elevation idler gears	6.80	13.60
40	Gaskets, fiber, cylinder head	.25	10.00
1	Gasket, rubber	3.75	3.75
1	Lanyard pulley bracket		16.65
8	Plates, reinforce with rivets	.30	2.40
1	Name plate	2.25	2.25
8	Instruction plates, floor, with screws	1.20	9.60
3	Nuts, recoil, spring compressor	10.85	32.55
1	Nut, hand, for elevating handwheel shaft		5.25
1	Plunger, for safety firing switch		3.15
16	Plugs, drain, with fiber washers	1.00	16.00
2	Plates, clamp, direction	1.40	2.80
1	Pit ladder brace		3.20
4	Sets pipes, equalizing	3.60	14.40
	For elevation locks:		
104	Brackets	6.95	722.80
192	Springs	.25	48.00
192	Lock bars	2.05	393.60
112	Collars	.85	95.20
112	Taper pins		10.65
112	Split pins		
2	Plugs, trunnion, with 2 pins	16.65	33.30
14	Sets screws, for racer cover plate	.15	2.10
51	Screws, bronze, for floor plate to angle iron	.45	22.95
1	Reflector for azimuth pointer lamp	14.00	14.00
8	Racers	2,050.00	16,400.00
1	Pair recoil cylinders		240.45
8	Screws for azimuth pointer	.40	3.20
216	Screws for removable floor plates	.30	64.80
8	Steel keys	.50	4.00
20	Steel plates	1.35	27.00
2	Steel studs and nuts	4.35	8.70
128	Scales, elevation, right-hand	1.80	230.40
128	Scales, elevation, left-hand	5.60	716.80
1	Shaft, traversing pinion, keys, split pins, and nuts		18.35
132	Top carriages	500.00	66,000.00
35	Washers, steel	.60	21.00
14	Washers for spring compressor	3.55	49.70
1	Washer, brass		2.50
1	Worm wheel, traversing		57.70
2	Yokes for safety firing switch	4.65	9.30
	ACCESSORIES.		
24	Blades, screw-driver, cross-handle	.30	7.20
4	Hooks, lifting	.03	.12
1	Handle, hydraulicr cylinder wrench		6.15
1	Rod for spanner wrench		.70
1	Screw driver, large, double-end		6.40
1	Screwd river, small, double-end		5.30
1	Screw driver, steel, 1½-inch		4.65
1	Wrench for crank pin		33.60
1	Wrench for screw driver		11.05
1	Wrench box for ¾-inch tap bolts (U44AB)		10.45
1	Wrench, spanner, for hydraulic cylinder follower		9.20
1	Wrench for gear-wheel shaft nut		7.45
1	Wrench, spanner, for hydraulic cylinder head		8.85
1	Wrench for hydraulic cylinder plug		14.00
1	Wrench for piston rod with wrenches for spring rod		5.40
2	Wrenches for 1.5-inch bolt on side frames	11.95	23.90
	AMMUNITION TRUCKS.		
1	Brake-lever guide		5.00
1	Brake shoe, left		13.90
1	Brake shoe, rihht		7.35
1	Brake shoe with pins and split pins		9.80
34	Caps, buffer	3.65	124.10
19	Handles	.65	12.35
12	Pins for caster wheels	1.90	22.80
1	Pin, wooden, for handle		.60
10	Pins, for buffer cap with split pins	.25	2.50
24	Plates, steel, for buffers	.25	6.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles	Price	Amount
	PART 1, CLASS 1, SECTION 3—Continued.		
	For 12-inch mortar carriage, model 1896 M1—Continued		
	AMMUNITION TRUCKS—Continued.		
6	Shot-tray ends with 64 rivets	$1.75	$10.50
50	Rivets for shot-tray shoes	.02	1.00
13	Shoes for shot tray	1.40	18.20
3	Shot-truck bodies	53.95	161.85
7	Wheels, caster	5.75	40.25
27	Wheels, truck	16.20	437.40
7	Washers for axle	.85	5.95
	For 12-inch mortars, common to all models.		
25	Brushes, slush, with handles	.75	18.75
222	Rammer heads	15.00	3,330.00
163	Rammer staves	8.00	1,304.00
233	Sponge heads	27.50	6,407.50
270	Sponge staves E	3.80	1,026.00
270	Sponge staves B	1.85	499.50
32	Adaptors for scrapers	3.00	96.00
1	12-inch mortar carriage, model 1908, complete except 1 base ring, 1 distance ring, 1 set traversing rollers		8,880.00
	For 12-inch mortar carriage, model 1908.		
1	Experimental sleigh locking device		308.40
1	Base ring		2,100.00
1	Distance ring		484.00
1	Set traversing rollers		323.00
40	Bolts	.20	8.00
4	Face plates	1.90	7.60
4	Keys	.20	.80
8	Pawl cam straps	2.20	17.60
2	Wrenches, spanner	10.90	21.80
8	Handles	8.30	66.40
	PART 1, CLASS 1, SECTION 4.		
	Implements for 1-pounder subcaliber guns.		
50	Cleaning sponges	1.30	65.00
	PART 1, CLASS 1, SECTION 7.		
	For 12-pounder guns.		
2	Sponges and rammers	8.00	16.00
	PART 1, CLASS 1, SECTION 8.		
	Miscellaneous parts for carriages.		
54	Oil plugs, ⅜-inch	.05	2.70
100	Oil plugs, ¼-inch	.05	5.00
24	Reel cords for lanyard attachments	.60	14.40
12	Screws, firing pistol	.15	1.80
20	Socket holders	.80	16.00
7	Straps, steel	.65	4.55
4	Cylinder-head extractors, 12-inch	3.40	13.60
12	Switch buttons	.30	3.60
3	Branches lighting circuits	7.35	22.05
6	Hinge hasp hooks for battery box	.75	4.50
33	Sockets for slush brushes		92.95
66	Rivets for slush brushes		
1	Junction box		3.85
6	Washers (P45AA1)	.40	2.40
24	Lamp holders		45.60
324	Lamp-holder springs		
100	Thimbles for cable	.24	24.00
32	Grease cups	6.50	208.00
	Firing-cable connections.		
864	Bronze sockets	.10	86.40
799	Bronze sleeves	.20	159.80
799	Bronze nuts	.10	79.90
799	Bronze swivels	.15	119.85
800	Rubber washers	.04	32.00
799	Rubber bushings	.10	79.90
800	Bronze plugs	.04	32.00
865	Bronze receptacles	.15	129.75

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price	Amount
	PART 1. CLASS 1, SECTION 8—Continued.		
	Firing-cable connections—Continued.		
200	Contact-fork connections	$0.25	$50.00
1	Ground connection		6.85
1	Pinion, bronze, 14 teeth		6.05
74	Pawl springs for safety lanyard attachment	.10	7.40
44	Sockets (E13AH)	1.10	48.40
1	Pawl for lanyard attachment		5.30
3	Blocks (P30E)	.10	.30
4	Drums	6.70	26.80
10	Reflectors with nuts for lamps	2.90	29.00
168	Bolts, tap, for plug boxes	.05	8.40
112	Bolts, tap, for hooks for portable lamps	.05	5.60
56	Hooks for portable lamps	1.20	67.20
	Electrical equipment for disappearing carriages.		
29	Sets for 6-inch D. C., model of 1898		6,250.00
90	Sets for 6-inch D. C., model of 1903		
10	Sets for 6-inch D. C., model of 1905		
9	Sets for 6-inch D. C., model of 1905, MI		
1	Set for 10-inch D. C., model of 1894		
72	Sets for 10-inch D. C., model of 1896		
18	Sets for 10-inch D. C., model of 1901		
27	Sets for 12-inch D. C., model of 1896		
37	Sets for 12-inch D. C., model of 1897		
21	Sets for 12-inch D. C., model of 1901		
	PART 1, CLASS 2, SECTION 2.		
	Maneuvering material.		
1	Sling cart, hand		425.00
50	Blocks, maneuvering	.25	12.50
86	Wedges	.15	12.90
133	Blocks, maneuvering	.40	53.20
2	Irons for repair of derrick	9.70	19.40
45	Hand chocks	.25	11.25
34	Handspikes, for garrison gin	1.80	61.20
16	Handspikes, for piper gin	2.30	36.80
75	Handles for mauls	.80	60.00
88	Handspikes, maneuvering	2.10	184.80
2	Handspike socket pawl springs, for garrison gin	.50	1.00
1	Mast for derrick		27.30
2	Heads for capstan	2.50	5.00
2	Handspike socket pawls for garrison gin	5.60	11.20
1	Pole for hand sling cart		9.10
4	Bars, capstan, assorted	5.55	22.20
1	Wheel for casemate truck		13.25
	Timbers, pine:		
20	8 inches by 8 inches by 15 feet	.45	9.00
20	10 inches by 10 inches by 35 feet	1.25	25.00
30	12 inches by 2 inches by 30 feet	.40	12.00
20	10 inches by 10 inches by 25 feet	1.00	20.00
30	12 inches by 3 inches by 15 feet	.30	9.00
4	12 inches by 12 inches by 25 feet	1.25	5.00
30	Blocks, maneuvering, oak, 10 inches by 2 inches by 18 inches	.30	9.00
	Blocks, maneuvering, yellow pine:		
16	8 inches by 4 inches by 44 inches	.60	9.60
4	10 inches by 10 inches by 24 inches	1.00	4.00
44	8 inches by 4 inches by 44 inches	.60	26.40
106	12 inches by 6 inches by 44 inches	.95	100.70
40	10 inches by 2 inches by 44 inches	.40	16.00
80	12 inches by 1 inch by 44 inches	.22	17.60
40	12 inches by 2 inches by 30 inches	.39	15.60
40	12 inches by 2 inches by 64 inches	.55	22.00
4	10 inches by 10 inches by 24 inches	1.00	4.00
22	Deckings, 12 inches by 12 inches by 44 inches	1.90	41.80
40	Chocks, for gun	.13	5.20
60	Chocks, hand	.24	14.40
40	Chocks, roller	.21	8.40
40	Chocks, wheel	.18	7.20
1	Sill, rear, for handcart		8.80
1	Top rail, rear, for handcart		
2	Top rails, side, for handcart		
1	Rear end board for handcart		
1	Set bottom boards		

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles	Price.	Amount
	PART 1, CLASS 2, SECTION 2—Continued.		
	Maneuvering material—Continued		
	Blocks, maneuvering:		
100	8 inches by 8 inches by 20 inches	$0.30—	$30.00
200	8 inches by 8 inches by 72 inches	.53	106.00
101	12 inches by 12 inches by 44 inches	1.39	140.39
10	Blocks, oak, 10 inches by 2 inches by 18 inches	.20	2.00
27	Blocks, yellow pine	.30	8.10
20	Chocks, pine	.25	5.00
2	Timbers, yellow pine, 12 inches by 12 inches by 25 feet	1.50	3.00
114	Timbers, pine	.68	77.52
8	Crowbars	3.45	27.60
4	Do	3.65	14.60
8	Dog chains	10.90	87.20
8	Hooks, counterweight	1.05	8.40
4	Do	1.20	4.80
9	Pinch bars, 5-foot	4.00	36.00
8	Pinch bars, 7-foot	4.75	38.00
8	Sling chains	17.20	137.60
4	Capstans	163.10	652.40
95	Holdfasts	1.65	156.75
4	Brace bolts for garrison gin	6.20	24.80
1	Piper gin		410.00
4	Handcarts	61.70	246.80
5	Garrison gins	380.00	1,900.00
2	Wheels, for hand sling cart	41.00	82.00
7	Gin slings	37.30	261.10
	PART 1, CLASS 2, SECTION 3.		
	Tools and supplies for fort repair shop.		
6	Threading tools	2.70	16.20
5	Straight edges, 10 feet	35.05	175.25
4	C. I. weights	10.00	40.00
9	Chisels, diamond point	.50	4.50
6	Chisels, flat flagging	.50	3.00
4	Cold chisels 1⅛-inch	.35	1.40
8	Mauls	5.30	42.40
1	Angle iron		3.50
6	Counterbores	9.55	57.30
1	Foot for universal clamp drill		2.55
14	Supporting pins	.85	11.90
14	Keys		11.50
14	Nuts		
14	Washers	.10	1.40
	PART 1, CLASS 2, SECTION 4.		
	Targets.		
1	Pyramidal target (complete)		110.00
	For pyramidal targets.		
	For base:		
101	Diagonal braces	1.10	111.10
30	Center prow cleats	.40	12.00
50	Planks	1.45	72.50
128	Prow planks	.70	89.60
56	Side prow cleats	.35	19.60
45	Sills	10.50	472.50
68	Transoms	1.55	105.40
	For superstructure:		
16	Pulleys for pulley blocks	1.00	16.00
16	Pulley blocks to transom	1.40	22.40
16	Pulley pins for pulley blocks	.05	.80
37	Wire ropes	1.85	68.45
25	Apex blocks	3.90	97.50
18	Eyebolts with nuts for lower end of wire rope	.60	10.80
71	Flags, red	1.50	106.50
8	Ropes for cover guys	.10	.80
4,227	Sheathing, per foot	.05	211.35
191	Strips	.10	19.10
13	Screw eyes for upper end of wire rope on apex block	.60	7.80
34	Screw eyes for flagstaff	1.85	62.90
117	Uprights	.65	76.05
44	Pulleys for apex blocks	.95	41.80
44	Pulley pins for apex blocks	.20	8.80
29	Flagstaffs	1.45	42.05
12	Ferrules, brass	.30	3.60

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 4—Continued.		
	For pyramidal targets—Continued.		
	For superstructure—Continued.		
12	Sleeves for flagstaff	$0.30	$3.60
93	Covers	13.00	1,209.00
12	Gallons paint for covers	3.00	36.00
15	Bridles	5.85	87.75
12	Bands, W. I.	1.45	17.40
16	Prow planks	1.10	17.60
16	Iron plates	.50	8.00
51	Staples	.20	10.20
4	Pennants	6.05	24.20
2	Canvas strips	.30	.60
5	Material targets for seacoast guns, 4.72-inch and under	86.00	430.00
	For material targets for seacoast guns, for 4.72-inch caliber and under.		
10	Superstructures, complete	28.50	285.00
3	Target frames	18.00	54.00
	For base:		
154	Diagonal braces	.40	61.60
240	Planks	1.00	240.00
159	Prow cleats	.25	39.75
529	Prow boards	.05	26.45
207	Prow planks	.50	03.50
28	Sills	8.85	47.8
74	Struts	.15	11.1
109	Transoms	1.45	58.0
	For superstructure:		
204	Diagonal braces	.45	91.80
234	Longitudinals	.65	152.10
5,870	Laths	.005	29.35
238	Stiffeners	.30	71.40
1,255	Strips	.08	100.40
266	Uprights	.70	186.20
385	Covers	2.95	1,135.75
221	Pipe braces	1.15	254.15
11	Gallons paint for covers	.90	9.90
600	Feet strips		5.70
20	Pieces timber, spruce	1.78	35.60
2	Diagonals	.20	.40
35	Bridles	4.70	164.50
7	Material targets for guns of 4.72-inch caliber or over (complete)	800.00	5,600.00
	For material targets, for 4.72-inch caliber or over.		
162	Running timbers	11.90	1,927.80
70	Middle timbers	14.60	1,022.00
746	Flotation blocks	1.87	1,395.02
304	Cross planks	1.10	334.40
129	Prow cleats	.45	58.05
161	Prow planking	.75	120.75
279	Frow-cleat braces	.45	145.55
142	Filling-in pieces	.11	15.62
9	Masts and couplings	23.00	207.00
104	Masts struts	1.85	192.40
76	Cross planks	1.10	83.60
12	Prow cleats	.45	5.40
26	Prow plankings	.50	13.00
28	Prow-cleat braces	.20	5.60
93	Mast braces	11.85	1,102.05
57	Mast sockets	24.60	1,402.20
109	Masts, coupling	9.15	997.35
76	Triangles	10.05	763.80
28	Bridles	5.00	140.00
27	Rear runway timbers	26.35	711.45
1	Front runway timber		26.85
210	Gallons metallic paint	3.00	630.00
1	Upper section mast		20.00
1	Rectangle		5.65
80	Yards canvas	.03	2.40
	For targets:		
180	Pounds paint, mixed, for woodwork	.15	27.00
77	Gallons paint mixed, for woodwork	1.50	115.50
25	Gallons paint, mixed, for woodwork	3.00	75.00
4	Bridles	17.20	68.80
3	Streamers	7.10	21.30

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price	Amount.
	PART 1, CLASS 2, SECTION 6.		
	Dummy projectiles.		
10	For 6-inch guns	$50.50	$505.00
15	For 10-inch guns	72.50	1,087.50
26	For 12-inch guns	80.00	2,080.00
	For dummy projectiles.		
	Bands, rear:		
16	For 5-inch guns	4.15	66.40
34	For 6-inch guns	5.34	181.56
18	For 8-inch guns	6.75	121.50
18	For 10-inch guns	7.65	137.70
14	For 12-inch guns	9.50	133.00
74	For 12-inch mortars	9.50	703.00
	Bases:		
1	For 4.72-inch R. F guns		5.25
2	For 5-inch R. F. guns	5.25	10.50
3	For 6-inch R. F. guns	6.00	18.00
3	For 8-inch guns	7.50	22.50
4	For 10-inch guns	8.25	33.00
4	For 12-inch guns	9.50	38.00
6	For 12-inch mortars	9.50	57.00
	Yokes:		
1	For 10-inch guns		12.50
3	For 12-inch guns	14.00	42.00
	Power extractors:		
5	Power extractors for 6-inch guns	44.45	222.25
1	Power extractor for 8-inch guns		48.75
4	Power extractors for 10-inch guns	52.85	211.40
4	Power extractors for 12-inch guns	79.20	316.80
	Hand extractors:		
3	Hand extractors for 12-inch guns	9.95	29.85
3	Hand extractors for 6-inch guns	4.75	14.25
31	Screws for front band for dummy projectiles, 12-inch guns	.25	7.75
3	Screws, countersunk for cap 6-inch dummy projectile	.15	.45
	PART 1, CLASS 4, SECTION 2.		
	For 2.95 inch Vickers-Maxim carriages.		
6	Electrical quadrants, complete	208.30	1,249.80
	PART 1, CLASS 10, SECTION 10.		
	Materials for cleaning, preserving, and repairing supplies.		
	Paint:		
6	Green, gallons	1.15	6.90
16	Yellow, gallons	1.32	21.12
20	White, gallons	1.32	26.40
8	Blue, gallons	1.32	10.56
5	Black, gallons	1.32	6.60
8	Brown, gallons	1.32	10.56
30	Olive drab, gallons	2.40	72.00
	PART 2, CLASS 3, SECTION 3.		
2	Patterns for top carriage side frames right and left, for 3.8-inch howitzer carriage, model of 1908	66.20	132.40
	PART 2, CLASS 3, SECTION 5.		
1	Arbor for use in assembling side frames for 12-inch M. C., model of 1896 M1		61.35
3	Old men	25.30	75.90
1	Set tools and fixtures for planing throttling grooves in recoil cylinders, 6-inch D. C. model 1905 M1		1,241.55
1	Tool holder for feed screw		10.00
1	Former for hood and hood angle for 3.8-inch gun carriage, model of 1904		12.90
1	Set of milling cutters and holders		29.65
	PART 2, CLASS 4, SECTION 2.		
	Test tools for 14-inch gun turret model of 1909.		
1	Upper and lower track width gauge		40.00
1	Roller gauge, maximum width		40.00
1	Upper track gauge No. 2		94.00
1	Track liner gauge		46.00
1	Lower track level gauge		86.00
1	Lower track gauge No. 1		110.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 2, CLASS 4, SECTION 2.		
	For 10-inch disappearing carriage, model 1894 M1.		
2	Fixtures for cutting teeth in traversing rack	$446.00	$892.00
1	Jig for retracting shaft bracket		446.00
3	Jigs for standards and brackets	412.66⅔	1,238.00
1	Jig for elevating slow motion parts		446.00
	For 6-inch barbette carriage, model 1910, pilot.		
1	Pedestal bolt hole gauge		138.00
2	Traversing roller gauges, maximum and minimum	13.87	27.74
2	Traversing worm wheel gauges, maximum and minimum	18.00	36.00
2	Roller path gauges, pivot yoke	27.90	55.80
2	Roller path gauges, pedestal	22.30	44.60
1	Pedestal concentricity gauge		82.25
1	Pedestal concentricity gauge bracket, long		17.00
1	Pedestal concentricity gauge bracket, short		32.10
1	Pedestal concentricity gauge arm		13.60
1	Cradle test gauge		249.90
1	Recoil cylinder test shaft		12.80
1	Cylinder shaft bracket		17.00
1	Cylinder concentricity gauge		28.45
1	Cylinder test piece		10.65
1	Pivot yoke, concentricity gauge (8 parts)		178.85
1	Elevation pin gauge		20.65
1	Shaft for trunnion gauge		21.05
1	Trunnion test gauge		10.75
1	Cradle feather gauge		2.30
1	Jig with 2 plugs for drilling shield support holes in pivot yoke		175.20
1	Jig for drilling holes in shield supports		219.15
2	Jigs for yoke, azimuth instrument	400.00	800.00
2	Jigs for platen azimuth instrument	400.00	800.00
	For 10-inch disappearing carriage, model 1894 M1.		
1	Drill jig for tripping bracket		80.45
1	Drill jig for crank		25.25
2	Drill jigs for link	28.50	57.00
1	Drill jig for conduit, drum and hub		45.50
1	Drill jig for intermediate shaft bracket		43.25
1	Drill jig for traversing and retracting crank shaft		32.50
1	Drill jig for conduit, drum and cover		32.25
1	Drill jig for pawl lever		20.75
1	Templet for pawl lever		18.25
1	Templet for safety latch		15.50
1	Templet for pawl (tripping)		15.25
1	Roller path leveling gauge for 8″ D. C., model 1896		25.80
1	Clinometer rest for 10″ gun		31.55
	PART 2, CLASS 5, SECTION 5.		
2	Bends, pipe	6.05	12.10
110	Bolts with nuts at each end	.60	66.00
1	Bolt and nut		.20
21	Pins, taper	.70	14.70
2	Brass couplings	7.35	14.70
6	Rivets, bronze	.02	.12
4	Tap bolts	.20	.80
4	Bolts	.20	.80
4	Set screws	.30	1.20
	PART 2, CLASS 5, SECTION 4.		
6	Bbls. wedges	3.47	20.82
	PART 2, CLASS 5, SECTION 7.		
	Castings for reel.		
46	Axle brackets, right	5.40	248.40
48	Axle bracket caps, right	.95	45.60
32	Axle brackets, left	4.30	137.00
38	Pole clamps	2.13	80.94
48	Pintle latches	.68	32.64
	Castings for cart.		
39	Lunette brackets	1.10	42.90
2	I beams	8.00	16.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 2, CLASS 5, SECTION 7—Continued.		
	Forgings for 2.24-inch (6-pounder) guns.		
1	Jacket		$250.0
1	Tube		
1	Locking hoop		250.00
1	Breech block		
	PART 2, CLASS 5, SECTION 6.		
1	Ingot, forged steel		319.20
1	Billet, forged steel		688.95
1	Billet, forged steel		286.40
	Castings for 12-inch mortar carriages, model 1908.		
8	Arms	$6.95	55.60
200	Bolts, tap	.55	110.00
162	Bolts, assorted	.55	89.10
130	Bushings		143.00
8	Bushings, front		
8	Bands, locking	19.43	155.44
16	Brackets, guide supports	.75	12.00
16	Brackets	4.75	76.00
8	Brackets, sear	.35	2.80
8	Brackets, pawl	6.10	48.80
8	Bearings	1.90	15.20
16	Bearing shafts	.85	13.60
16	Bearings, pawl shaft	3.25	52.00
8	Couplings, emptying	3.80	30.40
8	Crank arms	4.30	34.40
8	Cases, worm gear	7.54	60.32
8	Covers, worm-gear case	7.19	57.52
8	Covers, bevel gear	7.53	60.24
16	Cylinders, buffer	5.60	89.60
16	Collars, upper and lower	1.75	28.00
8	Caomings	2.10	16.80
8	Fulcrums, pawl, right		136.00
8	Fulcrums, pawl, left		
8	Filler pieces	7.10	56.80
4	Frames, follower, thrust	17.64	70.56
8	Gears, worm	8.40	67.20
8	Gears, segmental	17.10	136.80
4	Handwheels, ratchet	5.62	22.48
4	Handles, ratchet	8.29	33.16
4	Keys	.20	.80
32	Liners, upper and lower	28.10	899.20
80	Liners	11.00	880.00
8	Links	14.08	112.64
16	Locks, spring rod	4.40	70.40
8	Lids	1.50	12.00
8	Pawl cams, left	1.85	14.80
16	Pawls, locking	22.75	364.00
8	Pawl cams, right	1.85	14.80
16	Plates, instruction	.25	4.00
16	Plates, elevation direction	.18	2.88
16	Plates, depression direction	.18	2.88
8	Pinions, elevation bevel	2.50	20.00
8	Pawl treadles	.77	6.16
8	Pawls	2.80	22.40
4	Pawl levers	2.39	9.56
8	Rod connections	9.75	78.00
16	Rests, elevation stop	3.40	54.40
6	Sleighs	151.35	908.10
16	Stops, traversing	4.75	76.00
16	Stops, plunger	2.00	32.00
8	Stops, depression	10.70	85.60
16	Stops, elevation	5.00	80.00
8	Straps, connection rod	.55	4.40
20	Sleeves	.30	6.00
8	Shafts, worm gear	3.00	24.00
10	Sleighs	151.35	1,513.50
8	Supports, guide	4.50	36.00
48	Supports, spring cylinder	15.05	722.40
8	Sears	2.12	16.96
8	Wrenches, spanner	12.82	102.56
2	Wrenches, single	18.40	36.80
8	Worms and shafts	3.00	24.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 2, CLASS 5, SECTION 7.		
	For 14-inch gun turret, model of 1909.		
1	Casting of sight bracket, left		$78.10
1	Casting of cradle for telescope		90.90
6	Steel castings of top plate for ammunition truck, for 10-inch D. C. L. F., model of 1896	$8.70	52.20
	For 4.7-inch howitzer carriages, model of 1908.		
24	Castings of cradle head, rear	16.65	399.60
	For 4.7-inch and 6-inch howitzer limbers and caissons, model of 1905.		
16	Top carriages	14.80	236.80
	For 4.7-inch gun, limber and caisson, model of 1908.		
80	Castings of connecting pole sockets	15.55	1,244.00
29	Castings of pole sockets	7.25	210.25
3	Castings of pole sockets	7.25	21.75
	Castings for 3-inch telescopic sights, model 1910.		
1	Sight bracket		47.35
1	Cradle		71.70
2	Bronze castings 6 by 3 by 48 inches	60.90	121.80
2	Bronze castings 3 by 10 by 48 inches	87.15	174.30
	Castings for 2-inch telescopic sights.		
4	Cradles	6.95	27.80
4	Front sight brackets	3.05	12.20
4	Rear sight brackets	5.65	22.60
4	Sight shanks	1.40	5.60
1	Casting, bronze, for hood of experimental breech sight, for 14-inch gun, model of 1907		73.85
1	Casting of die holder for 3-inch rapid-firing gun, model of 1908		39.80
	For 3-inch field carriages, model 1902.		
22	Front sight bracket supports	69.55	1,530.10
32	Rear sight bracket supports	69.55	2,225.60
9	Castings of brake shoes, right, for ammunition truck, for 10-inch D. C., model 1901	2.20	19.80
9	Castings of brake shoes, left, for ammunition truck, for 10-inch D. C., model 1901	2.20	19.80
2	Castings for trunnion blocks for adapting 6-inch gun, model 1905, to 8-inch B. C., model 1892	23.00	46.00
1	Casting for recoil band shim for 6-inch gun, model of 1908 M11		30.00
1	Casting of base for dummy projectile, for 12-inch gun		3.40
2	Castings of front sight brackets for 15-pounder barbette carriage, model of 1903	5.20	10.40
1	Casting of cradle for caliber .30 rifle pressure gauge		8.05
	Castings for 12-inch mortar carriages, model of 1896 M1.		
66	Top carriages	177.05	11,685.30
132	Cap squares	10.45	1,379.40
186	Bushings, elevating shaft	1.70	316.20
132	Bushings, trunnion cap	11.90	1,570.80
148	Bushings, fulcrum	7.00	1,036.00
140	Bushings, handwheel shaft	1.00	140.00
46	Elevating stops	6.75	310.50
1	Section, azimuth circle		26.00
	For elevation disk rings:		
2	Castings for 8-inch D. C., model 1896	9.25	18.50
1	Casting for 10-inch D. C., model 1896	10.45	10.45
1	Casting for 6-inch D. C., model 1898	7.60	7.60
4	Castings for face plates for lathe	2.80	11.20
27	Axle bracket caps, right, for reel, model 1909	2.35	63.45
37	Axle brackets, right, for reel, model 1909	13.25	490.25
16	Axle brackets, left, for reel, model 1909	8.80	140.80
	For 6-inch howitzer caissons and limbers, mode of 1909.		
50	Pole sockets with lugs	5.80	290.00
50	Pole sockets, without lugs	5.13	256.50
150	Pintle latches	1.58	237.00
1	Pole socket		.70

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 2, CLASS 5, SECTION 7—Continued.		
	For pressure gauge mount, model of 1896, for U. S. rifle.		
3	Castings of cradles	$2.85	$8.55
17	Castings of tee teats and rammer wrenches	1.65	28.05
	For 6-pounder balloon gun carriage. model of 1910.		
1	Left trunnion		32.55
1	Right trunnion		31.10
1	Elevating worm bearing		64.56
1	Elevating worm bearing cap		40.65
1	Handwheel shaft bearing		7.75
	For 3-inch (15-pounder) masking parapet mount, model 1898.		
2	Forgings of piston rod	70.00	140.00
4	Sets forgings of retracting racks for 14-inch disappearing carriages, model of 1907	255.00	1,020.00
3	Forgings of Ring A for 6-inch guns	27.85	83.55
	Castings for 4.7-inch gun carriages, model of 1906.		
17	Spade brackets, right	8.84	150.28
17	Spade brackets, left	5.73	97.41
16	Lunette transoms	5.33	85.28
16	Pintle yokes	34.35	549.60
16	Elevation yoke transoms	3.00	48.00
16	Elevation yoke sides, right	1.40	22.40
16	Elevation yoke sides, left	1.40	22.40
9	Cradle bands, rear	4.85	43.65
11	Cradle bands, front	4.75	52.25
15	Trunnion bands	10.95	164.25
16	Axle bearings. right	9.55	152.80
16	Axle bearings, left	7.75	124.00
16	Traversing lock frames	7.50	120.00
18	Pintle bearings	25.00	450.00
36	Brake beams	12.25	441.00
16	Brake shaft brackets, right	15.80	252.80
16	Brake shaft brackets, left	8.30	132.80
8	Stops	4.00	32.00
16	Spade key brackets	4.55	72.80
16	Trail end reenforce plates	6.10	97.60
32	Lock legs, traveling	2.25	72.00
16	Traversing yokes	2.70	43.20
25	Traversing brackets	18.66	466.50
16	Traversing screw brackets	1.00	16.00
16	Traversing screw bracket caps	.56	8.96
16	Elevating gear brackets	7.48	119.68
7	Cradle bands, rear	9.55	66.85
7	Cradle bands, front	8.27	57.89
1	Trunnion band		21.90
36	Cylinder covers	1.54	55.44
16	Front sight bracket supports	.81	12.96
16	Rear sight bracket supports	1.19	19.04
32	Top shield brackets	1.59	50.88
8	Stops	1.30	10.40
16	Fasteners, female	.88	14.08
12	Traversing screw brackets	.55	6.60
	Castings for 3.8-inch gun carriages, model of 1904.		
1	Chisel, cold		.65
1	Drift, copper, small		.40
1	Drift, copper, large		.80
16	Brake shaft brackets, right	15.80	252.80
16	Brake shaft brackets, left	8.30	132.80
8	Stops	4.00	32.00
16	Spade key brackets	4.55	72.80
16	Trail end reenforce plates	6.10	97.60
32	Look legs, traveling	2.25	72.00
16	Traversing yokes	2.70	43.20
25	Traversing brackets	18.66	466.50
16	Traversing screw brackets	1.00	16.00
16	Traversing screw bracket caps	.56	8.96
16	Elevating gear brackets	7.48	119.68
7	Cradle bands, rear	9.55	66.85
7	Cradle bands, front	8.27	57.89
1	Trunnion band		21.90
36	Cylinder covers	1.54	55.44

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watertown Arsenal, Mass.—Continued.

No.	Articles.	Price.	Amount.
	PART 2, CLASS 5, SECTION 7—Continued.		
	Castings for 3.8-inch gun carriages, model of 1904—Continued.		
16	Front sight bracket supports	$0.81	$12.96
16	Rear sight bracket supports	1.19	19.04
32	Top shield brackets	1.59	50.88
16	Fasteners, female	.88	14.08
12	Traversing screw brackets	.55	6.00
8	Castings for diaphragm bases, for 3.8-inch gun caisson, model 1904	15.90	127.20
2	Sets castings for top carriage side frames, 3.8-inch howitzer carriage, model 1908	51.05	102.10
	Total		312,580.62

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1.		
	For 8-inch D. C., L. F., model 1896.		
1	Range disk ring	$9.00	$9.00
2	Special elevation stops	2.63	5.26
	For 10-inch D C., A. R. F., model 1896.		
6	Crosshead pawl springs	.95	5.70
24	Washers for filling plug	.054	1.30
	For 10-inch gun, model 1888.		
5	Rotating bands for dummy projectiles	5.25	26.25
1	Springs for dummy projectile	1.32	1.32
1	Rammer staff	2.63	2.63
5	Bases for dummy projectiles	3.93	19.65
	For 10-inch D. C., model 1896.		
9	Handles for ammunition trucks	.92	8.28
22	Rivets for handles for ammunition trucks	.03	.66
1	Brace for handles for ammunition trucks	1.50	1.50
12	Plate steel stiffeners for ammunition trucks	.16	1.92
18	Ties and stiffeners for ammunition trucks	.196	3.53
8	Brass strips for throttling bars	.45	3.60
1	Retraction rope	5.80	5.80
	For 10-inch D. C., model 1894.		
8	Retraction sheaves	2.12	16.96
3	Sets retraction ropes	10.86	32.58
8	Brass strips for throttling bars	.60	4.80
	For 10-inch B C., model 1896.		
2	Elevating and retraction cranks	17.62	35.24
	For 12-inch D. C., model 1897.		
22	Tool hooks	2.65	58.30
2	Handle arms	3.09	6.18
	For 12-inch gun, model 1888.		
1	Stop for breech mechanism	2.62	2.62
4	Securing screws for breech mechanism	.05	.20
1	Extracting rod for dummy projectile	4.23	4.23
	For 12-inch B. C., model 1892.		
1	Bronze ring for shot tray	1.90	1.90
3	Eyebolts for crane	2.60	7.80
1	Retraction rope	3.09	3.09

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1—Continued.		
	For 12-inch D. C. model 1901.		
1	Pawl buffer block	$14.35	$14.35
	For 12-inch D. C., model 1896.		
2	Nose, bronze, for shot tray	18.80	37.60
	PART 1, CLASS 1, SECTION 2.		
	For 6-inch D. C., model 1903.		
116	Throttling-bar strips	.56	64.96
1	Retraction-rope sheave	13.14	13.14
8	Vulcanized fiber gaskets	.08	.64
10	Retraction-clutch springs	1.28	12.80
4	Collars, filler, for subcaliber platform	2.19	8.76
4	Roller shoes for subcaliber platform	9.41	37.64
	For 6-inch gun, model 1903.		
8	Dummy cartridges	6.28	50.24
	For 15-pounder gun, model 1898.		
12	Bases for subcaliber cartridges	9.00	108.00
20	Extractor springs for subcaliber cartridges	1.14	22.80
2	Sets upper-shield braces	18.64	37.28
1	Set lower-shield braces	18.64	18.64
	For 5-inch gun, model 1897.		
6	Safety-bar operating studs	1.41	8.46
	For 15-pounder D. S., model 1898.		
2	Sleeves	100.40	200.80
2	Oscillating slides	216.40	432.80
	For 15-pounder gun, model 1902.		
1	Firing pin guide	7.90	7.90
	For 15-pounder gun, model 1903.		
2	Couplings	1.31	2.62
1	Cable hook	5.25	5.25
1	End section of sponge rod	3.00	3.00
3	Eyepieces for subcaliber cleaning rod	.75	2.25
	PART 1, CLASS 1, SECTION 3.		
	For 12-inch M. C., model 1896 M1.		
6	Bronze buffer caps for ammunition trucks	2.70	16.20
4	Fillister head screws	3.47	13.88
24	Tap bolts for auxiliary range scale	.26	6.24
72	Fiber washers	.036	2.59
320	Bolts for elevating bracket	.26	83.20
2	Wrenches for lock nuts	15.00	30.00
84	Locks	12.22	1,026.48
92	Sets auxiliary range scales	10.06	925.52
12	Filling plugs for recoil cylinders	.875	10.50
1	Friction filler piece	6.39	6.39
15	Bands for dummy projectiles	4.55	68.25
40	Springs for dummy projectiles	.48	19.20
48	Fiber gaskets	.027	1.30
2	Extractor rods for dummy projectiles	1.30	2.60
24	Couplings for equalizing pipes	.51	12.24
1	Stud, with nut, for spring-box bracket	2.70	2.70
1	Neck ring	1.41	1.41
1	Packing ring (in halves)	2.34	2.34
4	Handlebars for ammunition truck	.66	2.64
176	Tap bolts for range scales	.21	36.96
6	Rotating bands for dummy projectiles	6.08	36.48
144	Steel plates for adjusting buffers	.24	34.56
1	Shot-truck handle	.94	.94
12	Tap bolts for elevation locks	.59	7.08
10	Emptying couplings	.81	8.10
4	Followers, bronze	1.22	4.88
4	Elevation lock studs	3.41	13.64
16	Screws, assorted	.084	1.34
16	Spline screws, assorted	.084	1.34

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 3—Continued.		
	For 12-inch mortar, model 1890.		
1	Securing screw for obturator spindle plate	$1.32	$1.32
4	Tray latch handles, male	.85	3.40
4	Tray latch handles, female	.85	3.40
	PART 1, CLASS 1, SECTION 4.		
	For 75 m/m subcaliber gun.		
6	Thread clamp screws	1.78	10.68
	PART 1, CLASS 1, SECTION 6.		
	For 3-inch saluting gun.		
2	Trigger shafts	8.90	17.80
4	Trigger-shaft detents	.22	.88
1	Spring shoe	5.25	5.25
	PART 1. CLASS 1. SECTION 8.		
16	Hooks for packing extractors	2.04	32.64
12	Cap screws, 25/32 inch by 3 inches	.90	10.80
1	Firing-leaf pivot for seacoast-firing mechanism, model 1903	.19	.19
48	Handles for copper hammers	.30	14.40
10	Handles for long-handled mallets	.25	2.50
12	Screws for quadrants	.82	9.84
1	Firing-leaf pivot pin for seacoast-firing mechanism	5.16	5.16
14	Drip pans, A	1.00	14.00
12	Countersunk-head screws, ½ inch by 1½ inches	.44	5.28
1	Pawl for lanyard attachment	10.56	10.56
6	Pawl springs for lanyard attachment	.33	1.98
26	Bolts, with nuts, ⅜ inch by 3½ inches	.238	6.19
4	Sponge tubs	4.89	19.56
48	Screws, assorted	.165	7.92
100	Oil-cap washers	.013	1.30
48	Countersunk-head bronze screws for azimuth circle	.85	40.80
	PART 1, CLASS 2, SECTION 1.		
12	Shutter screws for telescopic sight	.22	2.64
12	Shutter screws for W. & S. azimuth instruments	.22	2.64
12	Index lamp bracket screws for W. & S. azimuth instruments	.22	2.64
	PART 1, CLASS 2, SECTION 2.		
2	Single capstan bars	5.63	11.26
10	Chocks, cradle	.12	1.20
1	Leg for garrison gin	26.10	26.10
6	Releasing hand wheels for hydraulic jacks	.875	5.25
3	Cap leathers for cylinder head of pulling jack	2.63	7.89
3	Double caps for plunger of pulling jack	2.63	7.89
109	Maneuvering rollers 8-inch diameter, 3 feet long	2.73	297.57
	Maneuvering blocks:		
50	10 inches by 2 inches by 18 inches, oak	.24	12.00
105	8 inches by 1 inch by 20 inches	.09	9.45
105	8 inches by 2 inches by 20 inches	.18	18.90
105	8 inches by 4 inches by 20 inches	.36	37.80
105	8 inches by 4 inches by 44 inches	.40	42.00
80	10 inches by 2 inches by 44 inches	.28	22.40
160	12 inches by 1 inch by 44 inches	.15	24.00
80	12 inches by 2 inches by 30 inches	.22	17.60
80	12 inches by 2 inches by 44 inches	.30	24.00
80	12 inches by 2 inches by 64 inches	.40	32.00
200	12 inches by 4 inches by 44 inches	.56	112.00
128	12 inches by 12 inches by 44 inches	1.56	199.68
40	Chocks, gun	.15	6.00
40	Chocks, hand	.15	6.00
40	Chocks roller	.15	6.00
40	Chocks, wheel	.15	6.00
48	Wedges, hardwood	.15	7.20
12	Maneuvering blocks, 6 inches by 12 inches by 44 inches	.69	8.28
16	Maneuvering blocks, 10 inches by 10 inches by 24 inches	.625	10.00
8	Maneuvering timbers, 12 inches by 12 inches by 25 feet	19.00	152.00
4	Capstan bars	8.00	32.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 3.		
1	Tap for tapping holes in end of mortar spring guide rods	$5.85	$5.85
3	Hognose tools	4.47	13.41
1	Set 1¼-inch taps	16.00	16.00
1	Boring bar with 4 cutters	8.27	8.27
12	Machinist's cold chisels	.67	8.04
11	Tool-steel tap wrenches	2.00	22.00
8	Boring bars	2.31	18.48
24	Cutters for boring bars	.90	21.60
2	Taps for electric cables	10.57	21.14
2	Dies for electric cables	5.46	10.92
3	Ratchet wheels for ratchet drill	1.33	3.99
1	Tap, 1½-inch	3.82	3.82
24	Cape chisels	.478	11.47
24	Flat chisels	.478	11.47
1	Wrench (per sketch)	8.85	8.85
1	Lathe gear, with 52 teeth	2.63	2.63
	PART 1, CLASS 2, SECTION 4.		
	For material targets.		
12	Running timbers, 10 inches by 10 inches by 21½ feet	7.20	86.40
24	Running timbers, 10 inches by 10 inches by 39⅝ feet	11.89	285.36
7	Middle running timbers, 10 inches by 10 inches by 38¼ feet	11.12	77.84
40	Flotation blocks	1.40	56.00
74	Cross planks	.92	68.08
24	Prow cleats	.52	12.48
29	Prow planks, 2 inches by 6 inches by 15 feet	.67	19.43
6	Prow planks, 2 inches by 8 inches by 15 feet	.86	5.16
32	Prow cleat braces	.59	18.88
40	Filling-in pieces	.09	3.60
8	Joint plates	1.74	13.92
2	Towing irons	2.95	5.90
83	Eyebolts	.51	42.33
5	Towing-iron bolts	.10	.50
15	Joint-plate bolts, 11¾-inch	.12	1.80
15	Joint-plate bolts, 21¾-inch	.16	2.40
14	Masts	14.96	209.44
6	Sheaves	1.70	10.20
6	Sheave pins	.60	3.60
31	Shackles	.635	19.68
82	Turnbuckles and eyes	1.00	82.00
9	Mast struts, 4 inches by 4 inches by 25 feet	1.26	11.34
10	Mast struts, 4 inches by 4 inches by 20 feet	1.10	11.00
16	Strut connections and bolts	3.92	62.72
16	Strut collars with 2 bolts	1.54	24.64
15	Guy collars with 2 bolts	1.70	25.50
12	Triangles	9.80	117.60
4	Bridles, complete	6.37	25.48
100	Boat spikes	.006	.60
100	Staples	.001	.10
14	Sleeves for masts	.40	5.60
9	Thimbles for 4-inch rope	.16	1.44
4	Material targets, 30 by 60 feet, complete	691.84	2,767.36
	For pyramidal targets.		
15	Sills, 12 inches by 12 inches by 20 feet	11.07	166.05
22	Planks, 3 feet by 12 feet by 17 feet	1.85	40.70
22	Transoms	1.35	29.70
26	Diagonal braces	.94	24.44
15	Side prow cleats	.24	3.60
18	Center prow cleats	.37	6.66
30	Prow planks, 2 inches by 10 inches by 14 feet	.54	16.20
70	Staples, heavy	.05	3.50
9	Apex blocks	4.04	36.36
514	Sheathing, feet	.027	13.88
30	Strips	.20	6.00
9	Flagstaffs	1.79	16.11
12	Red flags	1.24	14.88
40	Covers. No. 10, canvas	17.50	700.00
6	Wrought-iron bands	.67	4.02
3	Iron plates	.52	1.56
4	Wire ropes	.58	2.32
4	Screw eyes, ¼ inch by 3 inches	.19	.76
4	Screw eyes, ⅜ inch by 4 inches	.26	1.04
11	Screw eyes, ½ inch by 6 inches	.31	3.41
8	Sleeves	.11	.88
5	Ferrules	.11	.55

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 4—Continued.		
	For pyramidal targets—Continued.		
34	Uprights	$0.82	$27.88
19	Paint for covers, gallons	6.11	116.09
33	Paint for woodwork, gallons	1.46	48.18
17	Bridles	4.40	74.80
4	Pyramidal targets	106.25	425.00
	For material (rapid-fire) targets.		
12	Sills	10.58	126.96
33	Transoms	1.41	46.53
43	Diagonal braces, 2 inches by 8 inches by 7 feet 10 inches	.75	32.25
50	Prow cleats, 2 inches by 6 inches by 4 feet 9 inches	.47	23.50
35	Prow planks, 2 inches by 8 inches by 13 feet 4 inches	.65	22.75
10	Prow planks, 2 inches by 4 inches by 13 feet 4 inches	.44	4.40
15	Struts	1.41	21.15
15	Running boards	1.83	27.45
42	Planks, 3 inches by 10 inches by 14 feet	1.07	44.94
42	Planks, 3 inches by 10 inches by 12 feet	1.02	42.84
59	Uprights, 2 inches by 4 inches by 10 feet 6 inches	.59	34.81
25	Longitudinals	.66	16.50
64	Diagonal braces, 1 inch by 4 inches by 14 feet	.35	22.40
35	Stiffeners	.33	11.55
72	Pipe braces	.98	70.56
28	Gallons paint for covers	.95	26.60
77	Gallons paint for woodwork	1.67	128.59
15	Bridles, complete	4.40	66.00
89	Prow boards, 1 inch by 4 inches by 3 feet 2 inches	.06	5.34
89	Covers	4.90	436.10
	PART 1, CLASS 3, SECTION 1.		
	For 10-inch gun, models 1888 and 1895.		
72	Charges, Int. Lot 5–1908, charge 159 pounds, 2¼ ounces	2.00	144.00
	For 12-inch gun, models 1888 and 1895.		
160	Charges, L. & R., Lot 8–1908, charge 282 pounds, 12 ounces	4.50	720.00
4	Charges, C. P. W., Lot 7–1902, charge 260½ pounds	4.50	18.00
	For 12-inch mortars.		
10	Charges, L. & R., Lot 11–1908, for 3-inch 15-pounder guns, third zone; charge 21 pounds 10 ounces	.90	9.00
	International, Lot 2–1908.		
42	Charges, second zone, charge 16 pounds 8 ounces	.90	37.80
70	Charges, third zone, charge 19 pounds, 6 ounces	.90	63.00
16	Charges, fourth zone, charge 22 pounds, 10 ounces	.90	14.40
	C. P. W., Lot 2–1901.		
99	Charges, eighth zone, charge 56 pounds 3 ounces	.90	89.10
15	Charges, fifth zone, charge 33 pounds 9.6 ounces	.90	13.50
72	Charges, seventh zone, charge 47 pounds 3.2 ounces	.90	64.80
	PART 1, CLASS 3, SECTION 2.		
	For 15-pounder gun, models 1898 and 1902.		
138	Rounds fixed ammunition, C. P. W., Lot 1–1903, charge 4 pounds, 10½ ounces	.16	22.08
38	Rounds target practice ammunition fitted with Semple tracers	.16	6.08
	For 5-inch gun, model 1900.		
324	Charges, C. P. W., Lot 1–1904, charge 22 pounds 10¼ ounces	.40	129.60
	For 5-inch gun, model 1897.		
70	Charges, C. P. W., Lot 1, 1900, charge 15 pounds 5 ounces	.40	28.00
	For 6-inch gun, model 1900.		
47	Charges, C. P. W., Lot 1–1907, charge 37 pounds 11½ ounces	.40	18.80
404	Charges, C. P. W., Lot 2–1907, charge 38 pounds	.40	161.60
251	Charges, C. P. W., Lot 3–1907, charge 36 pounds 10 ounces	.40	100.40

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 3, SECTION 2.		
7,160	Rounds 1-pounder subcaliber ammunition	$0.06	$429.60
450	Rounds 18-pounder subcaliber ammunition, first zone	.07	31.50
1,678	Rounds 18-pounder subcaliber ammunition, second zone	.07	117.46
744	Rounds 18-pounder subcaliber ammunition, third zone	.07	52.08
	PART 1, CLASS 3, SECTION 6.		
	For 6-inch gun.		
780	Lead filling pieces for wrench hole in base plug	.02	15.60
	For 8-inch guns.		
430	Lead filling pieces for wrench hole in base plug, Nos. 3, 5, and 6	.018	7.74
2,250	Lead filling pieces for A. P. & D. P. shell	.021	47.25
148	Double crates for 12-inch mortar storage cases	.88	130.24
224	Single crates for 12-inch mortar storage cases	.44	98.56
	PART 1, CLASS 4, SECTION 1.		
	For Maxim automatic machine gun, caliber .30, model 1904.		
4	Rear sight pinions	2.62	10.48
1	Roller handle fastening screw	.75	.75
1	Traversing handwheel	1.30	1.30
	PART 1, CLASS 4, SECTION 2.		
20	Set screws for quadrant elevating joint pins, for Vicker's Maxim Mountain gun	.098	1.96
	PART 1, CLASS 4, SECTION 3.		
	3-inch field material.		
20	Washers for axles	1.34	26.80
400	Round-head rivets, ¾ inch by 3½ inches	.04¼	17.00
8	Bronze traversing plates	7.87	62.96
8	Bronze flanges for elevating gear transom	1.31	10.48
	PART 1, CLASS 4, SECTION 8.		
27	Lead rein roller straps	.10	2.70
	PART 1, CLASS 5, SECTION 3.		
	For field artillery targets.		
20	Uprights	.81	16.20
23	Bent pins	.11	2.53
11	Eyebolts for ¾-inch pipe	1.17	12.87
17	Eyebolts for 1-inch pipe	1.17	19.89
2	Wrought-iron pipes	2.92	5.84
12	Stakes, wood	.81	9.72
190	Target covers, A	1.02	193.80
222	Target covers, B	1.43	317.46
150	Target covers, C	1.43	214.50
80	Covers for movable targets	1.43	114.40
1	Moving target, complete	7.10	7.10
2	Stands and reels for cable for moving target	22.48	44.96
	PART 1, CLASS 6, SECTION 2.		
320	Rounds blank ammunition for 2.95 Vickers Maxim Mountain Gun; charge, 1¼ pounds saluting powder	.16	51.20
	PART 1, CLASS 6, SECTION 3.		
	Ammunition for 3-inch field guns.		
200	Saluting charges, 1¼ pounds saluting powder	.05	10.00
	PART 1, CLASS 9, SECTION 1.		
	Infantry equipment.		
6,000	Waist-belt adapters	.026	156.00
3,110	Gun slings, model 1898, converted to model 1907	.16¼	505.37
	PART 1, CLASS 9, SECTION 2.		
2,000	Spur straps	.115	230.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Benicia Arsenal—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 9, SECTION 3.		
	Artillery equipment.		
200	Artillery knapsacks	$1.85	$370.00
	PART 1, CLASS 9, SECTION 5.		
	Horse equipment.		
500	Saber straps	.105	52.50
25	Crown pieces for cavalry bridle	.26	6.50
12	Cheek pieces for cavalry bridle	.17	2.04
12	Throat latches for cavalry bridle	.17	2.04
250	Bridle headstalls	.90	225.00
250	Bridle reins	.60	150.00
	PART 1, CLASS 9, SECTION 6.		
1	Curb bridle, officer's, model 1902	4.25	4.25
1	Saddle, officer's, McClellan	22.40	22.40
	PART 1, CLASS 10, SECTION 1.		
40	Arm lockers for caliber .30 rifle, model 1903	8.75	350.00
100	Crates for cartridge-storage cases	.435	43.50
100	Packing boxes, 18 inches by 12 inches by 27 inches	1.58	158.00
100	Packing boxes, 10 inches by 15 inches by 48 inches	1.97	197.00
	PART 1, CLASS 10, SECTION 2.		
8	Screws for fencing bayonet, model 1906	.14	1.12
	PART 1, CLASS 10, SECTION 7.		
460	Sliding target frames, 6 feet by 6 feet	1.36	625.60
66	Sliding target frames, 6 feet by 12 feet	1.68	110.88
500	Interior target frames, 4 feet by 6 feet	1.00	500.00
900	Interior target frames, 6 feet by 6 feet	1.30	1,170.00
300	Interior target frames, 6 feet by 12 feet	2.00	600.00
	For targets I.		
35	Beams	1.09	38.15
5	Beam connecting pieces	.70	3.50
10	Center operating staves	.32	3.20
15	Stakes	.266	3.99
	For targets K, type A.		
1	Beam	.81	.81
17	Center operating staves	.32	5.44
1	Stake	.50	.50
	For targets L, type B		
1	Beam	.81	.81
1	Stake	.50	.50
	For rolling target M.		
1	Beam	.81	.81
1	Stake	.50	.50
	For sliding targets, 6 feet by 6 feet		
9	Posts	.90	8.10
50	Horizontal rails	.28	14.00
100	Vertical rails	.30	30.00
1	Main sill	.87	.87
400	Wedges	.05	20.00
14	Sash-cord clamps	.55	7.70
3,500	Staves for target E	.075	262.50
1,250	Staves for target F	.065	81.25
200	Staves for target H	.57¾	115.50
400	Falling targets G	1.97	788.00
100	Beam disappearing targets I	6.55	655.00
10	Sled targets K, type A	40.93	409.30
10	Sled targets L, type B	49.65	496.50
	Total		24,531.80

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1.		
1	Bore sight for 12-inch B. L. rifle, model of 1895		$11.40
	PART 1, CLASS 1, SECTION 2.		
1	Breech bore sight for 5-inch R. F. gun, model of 1900		6.70
	PART 1, CLASS 1, SECTION 3.		
25	Elevation quadrants, model of 1906, for 8, 10, and 12 inch mortar carriages	$40.15	1,003.75
	Parts of elevation quadrants, model of 1906:		
20	Arm sectors	3.10	62.00
15	Micrometers	2.28	34.20
57	Micrometer adjusting screw	.06	3.42
10	Quadrant arms	5.71	57.10
22	Worms	2.11	46.42
16	Quadrant bracket screws, for elevation quadrant, model of 1908	.34	5.44
1	Wrench for plug of cast-iron shell, model of 1907, for 12-inch mortar.	4.50	4.50
	PART 1, CLASS 1, SECTION 4.		
	Components of subcaliber and drill cartridge kits for 3-inch (15-pounder) guns, models of 1898 and 1902:		
100	Drill cartridges	14.20	1,420.00
200	Extractor springs per 100	4.55	9.10
200	Extractor spring screws do	3.10	6.20
1	Drill cartridge with hardwood body and bronze base, for 3-inch (15-pounder) gun, models of 1898 and 1902	53.00	53.00
36	Bases for drill cartridges for 3-inch (15-pounder) guns, models of 1898 and 1902	2.04	73.44
35	Bases for drill cartridges for 3-inch (15-pounder) gun, model of 1903	2.19	76.65
	Components of subcaliber and drill cartridge kits for 2.24-inch (6-pounder) guns:		
10	Subcaliber cartridges	15.70	157.00
40	Drill cartridges	6.89	275.60
10	Brass eyepieces	.25	2.50
10	Cleaning rods	.75	7.50
10	Extension pieces	.12	1.20
20	Extractor springs, spare	.09	1.80
20	Extractor-spring screws, spare	.07	1.40
10	Pin wrenches	.09	.90
	PART 1, CLASS 1, SECTION 8.		
4	2-inch telescopic sights, model of 1906, for right-hand side of carriage.	469.90	1,879.60
	For 2-inch telescopic sights, model of 1906:		
70	Chains	.04	2.80
70	Clamp pins	.09	6.30
10	Focusing nuts	.74	7.40
125	Focusing nut screws	.03	3.75
5 sets	Prisms (front and rear) set	3.98	19.90
4	Pin wrenches	.10	.40
44	Spanner wrenches	.45	19.80
357	Split pins for clamp pin per 100	.13	.46
250	Split pins do	.06	.15
339	Spring covers do	3.53	11.96
339	Spring-cover screws do	5.18	17.56
339	Spring-cover washers	.03	10.17
8	Telescope clamps, front	2.06	16.48
8	Telescope clamps, rear	1.90	15.20
	For 3-inch telescopic sights, model of 1904:		
70	Clamp pins each	.09	6.30
12	Cross sight holders with sights complete	4.73	56.76
1	Deflection scale		6.50
15	Deflection worms and nuts	2.42	36.30
5	Eye lenses, high power	3.43	17.15
5	Eye lenses, low power	3.43	17.15
5	Field lenses, high power	2.70	13.50
5	Field lenses, low power	2.70	13.50
10	Focusing nuts	1.01	10.10
60	Gear case cover bolts and nuts	.26	15.60
180	Lamp brackets with dimmers, complete	5.08	914.40
5	Objective lenses	23.34	116.70
1	Objective shutter		4.75
20	Prism springs	.08	1.60
12	Range drums with range drum scales	5.27	63.24
19	Range pointers	2.20	41.80
73	Range pointer screws	.08	5.84
423	Split pins for clamp pin	.01	4.23

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 8—Continued.		
	For 3-inch telescopic sights, mode of 1904—Continued.		
423	Split pins for yoke	$0.01	$4.23
15	Telescope clamps, eye end	6.09	91.35
14	Telescope clamps, cell end	2.36	33.04
140	Yoke cap bolts	.12	16.80
4	Prisms for telescopic sights, model of 1897.	7.32	29.28
	Parts of telescopic sights, models of 1898 and 1898M:		
6	Eye lenses for model of 1898	3.19	19.14
6	Objective lenses for model of 1898M	11.26	67.56
1	Outside deflection scale		.86
8	Prisms	10.38	83.04
5	Shutters for model of 1898	.65	3.25
6	Sunshades for model of 1898	1.33	7.98
50	Sunshade bushing set screws	.07	3.50
34	Brackets for telescopic sights, model of 1899	53.29	1,811.86
2	Deflection scales for telescopic sights, Type "A," model of 1899	3.10	6.20
2	Sight post nut taper pins for telescopic sight for 15-pounder barbette carriage, model of 1902	.67	1.34
1	Tube ring for telescopic sight, model of 1902		.90
12	Screws for inside of deflection scale, for telescopic sights	.04	.48
1	Telescopic sight, model of 1910, experimental (exclusive of telescope)		509.80
1	Telescopic musket sight, experimental		876.00
1	Pouch for telescopic musket sight		7.50
	PART 1, CLASS 2, SECTION 1.		
45	Observation telescopes, seacoast, model of 1908, without caps or carrying cases, including chests	176.00	7,920.00
	Parts of observation telescopes, seacoast, model of 1908:		
6	Amber glass holders and disks	1.63	9.78
11	Clamp bolts	.66	7.26
25	Clamp nuts	.24	6.00
20	Clamp screws	.46	9.20
20	Distance pieces	.88	17.60
3	Eye lenses (24-power eyepiece)	5.22	15.66
3	Eye lenses (12-power eyepiece)	3.17	9.51
2	Eyepieces (24-power)	18.55	37.10
2	Eyepieces (12-power)	14.50	29.00
4	Field lenses (24-power eyepiece)	4.20	16.80
4	Field lenses (12-power eyepiece)	1.90	7.60
10	Focusing nuts	.69	6.90
75	Focusing-nut screws	.04	3.00
10	Focusing rings	1.58	15.80
50	Glass knob pins per 100	1.92	.96
20	Glass holder knobs	.20	4.00
20	Glass holder studs	.57	11.40
31	Knob washers	.10	3.10
41	Long prism holder screws	.16	6.56
21	Long prism studs	.21	4.41
3	Objectives	9.63	28.89
10	Objective shutters	2.28	22.80
100	Objective-shutter plungers per 100	8.25	8.25
6	Prisms	2.93	17.58
100	Prism holder screws per 100	.57	.57
30	Prism springs	.21	6.30
75	Prism-spring screws	.12	9.00
20	Retainers	.28	5.60
40	Retainer screws	.22	8.80
40	Shoes	.20	8.00
20	Short prism studs	.54	10.80
35	Shutter plunger springs	.04	1.40
40	Sleeve screws	.06	2.40
25	Stops	.59	14.75
25	Stop screws	.04	1.00
5	Yokes	5.07	25.35
30	Predicters	21.25	637.50
55	Chests for predicters	1.05	57.75
10	Pratt range boards, model of 1905	111.40	1,114.00
	Parts of Pratt range boards, model of 1905:		
1	Canvas chart	6.40	6.40
24	Clamps with nut and washer	47	11.28
130	Hook eyes for twine	.06	7.80
35	Lower clips	.25	8.75
18	Time range boards, model of 1908	41.37	744.66
14	Wind component indicators	34.70	485.80

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1. CLASS 2, SECTION 1—Continued.		
	Parts of wind component indicators:		
6	Azimuth pointers	$1.07	$6.42
17	Clamping gibs	.32	5.44
11	Pointers	1.02	11.22
6	Target arm scales	2.77	16.62
5	Mine prediction rulers	9.75	48.75
14	Deflection boards, model of 1905, for 10-inch guns	122.35	1,712.90
4	Deflection boards, model of 1906, for 12-inch mortars	142.20	568.80
	Parts of Lewis depression position finders, model of 1907:		
6	Azimuth circles	2.15	12.90
12	Azimuth dials	2.15	25.80
23	Azimuth dial pinions	1.80	41.40
20	Blocks for snap switches	1.55	31.00
6	Center pins	.09	.54
6	Clamp screws for slide block and nut block	.15	.90
12	Gears	1.62	19.44
115	Lamp-hood screws	.04	4.60
153	Levels	3.25	497.25
369	Level screws	.30	110.70
725	Level-screw nuts	.11	79.75
6	Leveling screw sockets	.35	2.10
51	Oil-hole screws	.03	1.53
6	Paper range dials	.21	1.26
7	Pinions	2.35	16.45
6	Pin wrenches, large	.55	3.30
1	Scale, $\frac{1}{100}$ degree	....	14.50
6	Screws for azimuth dial block	.09	.54
60	Screws for azimuth dial pinion	.10	6.00
1	Screw for draw tube	....	.58
158	Screws for gear guard ring .... per 100	2.91	4.60
6	Screws for table	.08	.48
6	Stems	.92	5.52
110	Table center screws .... per 100	8.82	9.70
30	Table clamping screws and nuts	.81	24.30
1	Taper pin for table clamp	....	.13
6	Trunnion centers	1.62	9.72
60	Trunnion center screws .... per 100	6.58	3.95
50	Trunnion yoke screws	.25	12.50
170	Window retaining screws .... per 100	2.35	4.00
1	Wiring, special .... set	3.28	3.28
6	Wiring, complete with lamp fittings .... do	5.40	32.40
	For Lewis depression position finders, Type A:		
12	Screw drivers, No. 13	.34	4.08
12	Screw drivers, No. 31	1.25	15.00
25	Teat wrenches, No. 42	1.17	29.25
9	Whistler-Hearn plotting boards, model of 1904	298.15	2,683.35
	Parts of Whistler-Hearn plotting boards:		
10	Arms (4 to a set) .... set	38.94	389.40
3	Azimuth gear dial pinions	3.00	9.00
190	Clamping quadrant screws .... per 100	2.21	4.20
190	Correction box cover screws .... do	2.26	4.29
22	Dial box intermediate gears	1.04	22.88
27	Dial pinions	1.10	29.70
20	Gun arm azimuth gear dial pinions	1.30	26.00
66	Gun arm azimuth scale pointers	.10	6.60
5	Gun arm centers	86.78	433.90
22	Gun arm clamp shoes	.23	5.06
2	Head screws for mortar arm box, special	.15	.30
25	Range correction pinions, partly finished	.35	8.75
281	Subcaliber range scales	.53	148.93
236	Subcaliber range-scale troughs (for chest)	.30	70.80
	Parts of plotting boards:		
4	Auxiliary arms	6.45	25.80
180	Azimuth guard screws .... per 100	1.73	3.11
125	Azimuth scale pointer screws .... do	3.54	4.43
180	Azimuth strip retaining screws .... do	2.83	5.09
200	Base line arm adjusting screws and nuts .... do	8.10	16.20
200	Base line azimuth scale screws .... do	2.04	4.08
6	Base line verniers, left-hand	.59	3.54
6	Base line verniers, right-hand	.75	4.50
65	Center pivot screws	.09	5.85
12	Couplers	2.20	26.40
323	Coupler clips	.12	38.76
17	Canvas covers	1.78	30.26
136	Fixed limb screws (front) .... per 100	3.32	4.52
25	Fixed limb screws (rear)	.04	1.00
114	Gun arm azimuth subdial indicator screws .... per 100	5.44	6.20
30	Gun arm azimuth strips	.16	4.80
100	Gun arm azimuth pinion bearing screws .... per 100	2.15	2.15

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 1—Continued.		
	Parts of plotting boards—Continued.		
15	Handles for targs	$0.07	$1.05
25	Index boxes	18.47	461.75
24	Index disk latches, old type	1.37	32.88
10	Index disk latches, new type	.59	5.90
30	Index disk latches, complete	.49	14.70
100	Index knobs per 100	4.90	4.90
60	Index pinions, new type	.39	23.40
24	Index pinions, old type	.45	10.80
130	Index pointers per 100	3.54	4.60
45	Index racks and frames	2.26	101.70
100	Latch knobs	.06	6.00
36	Latch stops	.26	9.36
36	Latch-stop screws	.04	1.44
110	Latch-stop springs (new type)	.03	3.30
182	Lateral adjusting vernier screws per 100	2.14	3.89
305	Locking-lever springs do	13.64	41.60
60	Locking-lever studs	.10	6.00
94	Locking studs, complete	.41	38.54
200	Locking-stud pins per 100	1.45	2.90
20	Locking plates (partly finished)	1.92	38.40
20	Locking plungers and pins	.39	7.80
20	Locking-plunger springs (new type)	.10	2.00
25	Locking-stud springs (old type)	.06	1.50
3	Metallic scale arms .60 inch long; graduated for difference charts	10.95	32.85
50	Mounting pieces	.05	2.50
2	Pin centers, male, for difference chart scale arms	1.28	2.56
20	Plunger guide plates	.11	2.20
150	Plunger guide plate screws per 100	1.87	2.81
40	Primary station block screws	.13	5.20
24	Screw drivers, small	1.00	24.00
4	Secondary arms	8.75	35.00
1	Secondary station block with vernier		5.95
30	Slide adjusting wedge screws	.13	3.90
130	Spider arm screws	.04	5.20
57	Strips for main azimuth circle	1.25	71.25
11	Strips for gun-arm azimuth circle	1.10	12.10
150	Tally box screws per 100	1.94	2.91
117	Tally pointers	.07	8.19
40	Tally subdial pointers	.09	3.60
50	Targ indicators	.14	7.00
10	Teat wrenches for arm and pantograph pivot nuts	.77	7.70
100	Tension adjusting screws per 100	1.90	1.90
150	Tilting post spring screws do	1.60	2.40
150	Tilting post screws do	2.50	3.75
150	Worm guard screws do	1.40	2.10
40	Worm set screws and nuts	.18	7.20
2	Mortar plotting boards, model of 1906MI	340.00	680.00
16	Mortar plotting boards, model of 1906	394.00	6,304.00
	Parts of mortar plotting boards:		
4	Base line arm-support plates	.55	2.20
23	Dial pinions	1.39	31.97
120	Dial box bushing set screws per 100	2.42	2.90
22	Dial box intermediate gears	1.01	22.22
2	Dowels for mortar arm box	.04	.08
5	Mortar arms	36.65	183.25
1	Mortar-arm box		10.80
29	Mortar-arm box screws	.04	1.16
14	Mortar-arm azimuth gear dial pinions	1.83	25.62
60	Mortar-arm azimuth scale pointers	.13	7.80
25	Mortar-arm azimuth strips (not numbered)	.25	6.25
30	Mortar-arm hinge pivot screws	.10	3.00
131	Mortar-arm post retaining screws per 100	2.60	3.41
10	Mortar-arm azimuth gear tally pinions	1.22	12.20
14	Mortar-arm center support slides and nuts	1.15	16.10
14	Tally pinions	.96	13.44
36	Zone scales	15.10	543.60
47	Subcaliber zone scales, not graduated	4.30	202.10
1	360° mortar plotting board		2,954.00
6	Locking lever springs for index box of 360° mortar plotting board	.16	.96
3	Submarine plotting boards, model of 1906	253.98	761.94
	Parts of submarine plotting boards:		
8	Arms (3 to a set) per set	27.50	220.00
1	Primary arm		8.10
1	Secondary arm		8.10
4	Fire commander's plotting boards, model of 1906	1,058.50	4,234.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 1—Continued.		
	Parts of fire commander's plotting boards:		
40	Azimuth correction plate set screws	$0.04	$1.60
20	Block tongues	.88	17.60
40	Block tongue screws	.08	3.20
125	Disk stop screws ... per 100	2.80	3.50
30	Gun-arm azimuth scale pointers	.06	1.80
100	Gun-arm box cover screws ... per 100	2.20	2.20
6	Gun-arm clamps	4.70	28.20
1	Gun-arm clamping lever	....	2.05
50	Guide screws	.07	3.50
50	Longitudinal slide gib screws	.02	1.00
50	Pantograph bearing support screws	.06	3.00
15	Pinions to movable limb	1.43	21.45
50	Range correction dial set screws	.04	2.00
46	Support adjusting wedge studs and nuts	.16	7.36
80	Support base set screws	.04	3.20
8	Tally pinions	1.44	11.52
10	Teat wrenches (for arms and pantograph pivot nuts)	.72	7.20
	Parts of Swasey azimuth instruments:		
349	Azimuth circles and index disk lamp brackets	1.10	383.90
2	Azimuth dial lamp bracket screws	.09	.18
125	Binding post screws ... per 100	6.52	8.15
5	Brashear erecting prisms	6.17	30.85
1,000	Cross wire screws ... per 1,000	9.70	9.70
10	Disk cranks	2.30	23.00
10	Disk-crank knobs	.67	6.70
3	Erecting prism cap screws	.09	.27
11	Eye lenses	2.06	22.66
2	Eye pieces	17.25	34.50
12	Field lenses	1.85	22.20
1	Fuse and resistance coil block	....	2.00
5	Hagood tripod mounts	40.23	201.15
35	Knobs	.40	14.00
1	Modified lamp bracket	....	12.15
41	Lamp sockets, complete, for cross-wire lamp brackets	3.50	143.50
300	Lamp sockets, complete, for scale lamp brackets	.74	222.00
307	Lamp-socket springs	.18	55.26
6	Objective lenses	10.65	63.90
68	Piermounts	2.08	141.44
2	Prism cap screws	.07	.14
50	Shutter washers ... per 100	3.70	1.85
80	Spring covers	.09	7.20
1	Telescope without optics	....	129.50
50	Tripods	23.67	1,183.50
100	Wire clamping screws ... per 100	2.40	2.40
6	Wiring complete with lamp sockets ... per set	5.40	32.40
25	Wiring (without lamps, holders, etc.) ... do	1.26	31.50
137	Wooden boxes for packing azimuth instruments	1.22	167.14
347	Yoke stops ... per 100	5.11	17.73
	Parts of Swasey depression position finders:		
269	Cross-wire clips ... do	.62	1.67
500	Cross-wire screws ... do	2.56	12.80
6	Eye lenses (12-power)	2.58	15.48
6	Eye lenses (20-power)	2.58	15.48
6	Field lenses (12-power)	2.71	16.26
150	Lamp holders with springs	1.07	160.50
155	Level clamping screws ... per 100	5.26	8.15
1	Level scale for striding level	....	.83
50	Switch screws	.05	2.50
	PART 1, CLASS 2, SECTION 6.		
3	Display boards showing the process of manufacture of smokeless powder (except samples)	24.75	74.25
3	Display boards showing a sample of the powder grains used for each type of gun in service and designed for service (except samples)	24.75	74.25
1	Saluting primer, igniting, sectionalized	....	2.42
1	20-grain saluting primer, sectionalized	....	2.10
1	20-grain igniting primer, sectionalized	....	2.42
1	110-grain igniting primer, sectionalized	....	2.42
1	20-grain percussion primer, saluting, sectionalized	....	2.42
1	110-grain percussion primer, sectionalized	....	2.52

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 7.		
	Components of reloading and cleaning outfits for Coast Artillery:		
10	Case holders for 2.95-inch mountain gun	$1.05	$10.50
25	Case holders, small	2.80	70.00
20	Decapping tools, 10 inches long	.35	7.00
25	Decapping tools, 17.9 inches long	1.93	48.25
50	Hammers	.72	36.00
15	Bushings for 2.95-inch subcaliber gun	2.55	38.25
10	Bushings for 3-inch (15-pounder) gun, models of 1898 and 1902	4.40	44.00
10	Bushings for 3-inch (15-pounder) gun, model of 1903	5.45	54.50
25	Small primer inserting presses	10.80	270.00
	For optical repair kits, for seacoast artillery:		
34	Collimating telescopes, including tube rings for 3-inch telescopic sight, model of 1904, 2-inch telescopic sight, model of 1906, and telescopic sight, model of 1903	53.30	1,812.20
34 sets.	Pieces for alteration of chests ... set	.65	22.10
1	Vertical resizing press		273.35
	For vertical resizing press:		
	For 3-inch saluting gun—		
1	Resizing die		26.35
1	Pushout		12.95
	For 2.95-inch mountain gun—		
1	Resizing die		25.87
1	Pushout		12.95
	For 3-inch field gun—		
1	Resizing die		28.10
1	Pushout		13.00
1	Horizontal resizing press for cartridge cases for 3-inch saluting gun		158.00
1	Rear cross head for horizontal resizing press for cartridge cases for 3-inch saluting gun		5.20
1	Resizing die for cartridge cases for 1.457-inch (1-pounder) Maxim quick-firing gun		37.60
1	Resizing die for cartridge cases for 3-inch (15-pounder) gun, model of 1903		206.60
1	Section No. 1 of resizing die for cartridge cases for 3-inch (15-pounder) gun, model of 1903		59.60
1	Die holder for resizing press for 3-inch (15-pounder) gun, model of 1903		123.75
1	Saluting powder measure for 4.72 and 6-inch Armstrong guns		4.00
	For pressure gauge outfits, major caliber:		
100	Pressure gauges, complete	8.30	830.00
18,675	Cannon pressure cylinders ... per 1,000	12.67	236.61
2,175	Washers ... do	9.00	19.58
30	Special washers for major caliber pressure gauges	.59	17.70
	For pressure gauge outfit, medium caliber:		
17	Chests	2.45	41.65
51	Housings	6.47	329.97
51	Closing caps	2.15	109.65
51	Pistons	2.15	109.65
17	Teat wrenches	.92	15.64
17	Tee teat and reamer wrenches ... each	.81	13.77
17	Housing reamers ... do	1.89	32.13
17	Teat-hole reamers ... do	1.65	28.05
17	Cannon gas-check inserters ... do	.27	4.59
2,000	Cylinder holders ... per M	5.30	10.60
1,329	Washers ... do	6.00	7.97
	For pressure-gauge outfits, minor caliber:		
38,200	Small-arms gas checks ... per M	40.00	15.28
29,155	Small-arms pressure cylinders ... do	16.85	491.26
2	Pistons ... each	5.30	10.60
1	Teat-hole reamer for copper-covered minor-caliber pressure gauge ... each		2.30
25,000	Cannon gas checks for medium and major caliber pressure gauges, per M	2.94	73.50
28,000	Revolver pressure cylinders ... per M	7.72	216.16
	Components of outfits for filling projectiles with explosive "D":		
12	Adjustable cleaning taps for major caliber projectiles ... each	8.00	96.00
1	Adjustable cleaning tap for medium caliber projectiles, Class I, each		6.00
1	Basin for medium caliber projectiles, Class III ... each		1.25
16	Basins for major caliber projectiles ... do	1.25	20.00
1	Basin, drill, and former guide for major caliber projectiles, each		1.25
2	Combination taps and reamers for medium caliber projectiles, Class I ... each	15.10	30.20
20	Cutters for medium caliber projectiles ... do	2.00	40.00
20	Cutters for major caliber projectiles ... do	2.00	40.00
86	Cutter blades for medium caliber projectiles ... do	1.00	86.00
106	Cutter blades for major caliber projectiles ... do	1.20	127.20
2	Drill guides for medium caliber projectiles, Class I ... do	2.00	4.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 2, SECTION 7—Continued.		
	Components of outfits for filling projectiles with explosive "D"—Continued.		
10	Drill guides for medium caliber projectiles, Class III	$2.00	$20.00
6	Drill guides for major caliber projectiles	4.50	27.00
5	Drill guide wrenches for medium-caliber projectiles, Class III	1.50	7.50
2	Dummy fuses for medium caliber projectiles, Class I	4.31	8.62
9	Finishing rammers for medium caliber projectiles, Class III	14.00	126.00
7	Finishing rammers for major caliber projectiles	16.00	112.00
15	Fixtures for medium caliber projectiles	15.00	225.00
8	Formers for medium caliber projectiles, Class III	2.00	16.00
3	Formers for major caliber projectiles	8.50	25.50
10	Former guides for medium caliber projectiles, Class III	2.00	20.00
7	Former guides for major caliber projectiles	4.50	31.50
14	Fuse wrenches for medium caliber projectiles	3.00	42.00
3	Fuse wrenches for major caliber projectiles	4.00	12.00
1	Fuse hole plug wrench for major caliber projectiles		3.50
1	Fuse lifter for major caliber projectiles		.60
1	Fuse-plug wrench for medium caliber projectiles, Class III		2.50
1	Lifting hook for major caliber projectiles	1.00	1.00
13	Measures for medium caliber projectiles, Class III	.90	11.70
15	Measures for major caliber projectiles	.95	14.25
4	Pipe handles for medium caliber projectiles	4.00	16.00
4	Pipe handles for major caliber projectiles	4.00	16.00
1	Pipe vise, special, for major caliber projectiles		185.00
2	Rammers with flat end for medium caliber projectiles, Class I	7.50	15.00
1	Rammer with round end for medium caliber projectiles, Class I		6.50
17	Rammers with beveled head for medium caliber projectiles, Class III	12.00	204.00
5	Rammers with beveled head for major caliber projectiles	12.00	60.00
9	Rammer guides for medium caliber projectiles, Class III	6.00	54.00
43	Rammer guides for major caliber projectiles	7.00	301.00
1	Scraper for major caliber projectiles		1.50
1	Spanner wrench for closing cap for medium caliber projectiles, Class I		3.50
1	Support for medium caliber projectiles, Class III		7.00
4	Supports for major caliber projectiles	16.00	64.00
2	Thread cleaners for medium caliber projectiles, Class II	.80	1.60
15	Thread cleaners for medium caliber projectiles, Class III	.84	12.60
16	Thread cleaners for major caliber projectiles	.88	14.08
1	Top block for block for holding projectiles for medium caliber projectiles, Class I		3.50
3	Weights for medium caliber projectiles, Class III	4.00	12.00
1	Wrench for base plug for medium caliber projectiles, Class III		10.00
8	Wrenches for base plug for major caliber projectiles	10.00	80.00
1	Wrench for cleaning tap, adjustable		1.00
10	Securing clips for attachment to maximum thermometers	1.43	14.30
1	Tit wrench for plug of 12-inch cast-iron shell		11.65
	PART 1, CLASS 3, SECTION 1.		
1	Base cover for 16-inch A. P. shot each		3.47
4	Fixed common steel shell for 3-inch (15-pounder) guns, models of 1898 and 1902	11.65	46.60
342	Fixed common steel shell, sand filled, fitted with "Semple" tracers, for 3-inch (15-pounder) guns, models of 1898 and 1902	9.17	3,136.14
3,030	Fixed common steel shell, for 3-inch (15-pounder) gun, model of 1903	15.90	48,177.00
1,122	Fixed common steel shell, sand filled, for 3-inch (15-pounder) gun, model of 1903	10.40	11,668.80
360	Fixed common steel shell, sand filled, fitted with "Semple" tracers, for 3-inch (15-pounder) gun, model of 1903	10.90	3,924.00
10	Common steel shell, 3-inch (15-pounder), sand filled, provided with "Semple" tracers and steel base covers	5.00	50.00
790	Fixed blank ammunition for 3-inch saluting gun (utilizing fired cartridge cases, not packed), rounds	.39	308.10
148	Fixed cast-iron shot, sand filled, for 3-inch (15-pounder) guns, models of 1898 and 1902	8.48	1,255.04
19	Fixed cast-iron shell, sand filled, fitted with "Semple" tracers, for 3-inch (15-pounder) guns, models of 1898 and 1902	9.00	171.00
993	Fixed cast-iron shot, sand filled, for 3-inch (15-pounder) gun, model of 1903	9.70	9,632.10
19	Fixed cast-iron shot, sand filled, fitted with "Semple" tracers, for 3-inch (15-pounder) gun, model of 1903	10.20	193.80
6	Cast-iron shell, empty (6-pounder), fitted with shell tracers	2.00	12.00
10	Cast-iron shell, 6-pounder, loaded, and fused with 21-second combination fuses	5.42	54.20
4	Dummy cartridges for 4.72-inch Armstrong gun, 40 calibers	1.91	7.64
18	Cartridge cases for 3-inch (15-pounder) guns, models of 1898 and 1902	2.40	43.20
4,964	Cartridge cases for 3-inch (15-pounder) guns, model of 1903	2.68	13,303.52

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 3, SECTION 1—Continued.		
10	Cartridge cases for 4.72-inch Armstrong gun, 40 calibers	$2.59	$25.90
100,000	Felt wads for 3-inch saluting gun cases ... per 1,000	9.90	990.00
1	Steel base cover for 3-inch (15-pounder) common steel shell	....	.85
1	Copper calking ring for 3-inch (15-pounder) common steel shell	....	.05
6	Compressed charges of explosive "D," for 6-pounder common steel shell	.60	3.60
	PART 1, CLASS 3, SECTION 3.		
91,475	Fixed common steel shell, sand filled, for 1-pounder subcaliber gun	.82	75,009.50
10,000	1-pounder subcaliber shell	.25	2,500.00
1,000	Fixed steel shell, sand filled, with igniting primers, fitted with "Semple" tracers for 1-pounder subcaliber gun	1.37	1,370.00
50	Felt wads for blank ammunition for 1-pounder subcaliber gun, per 100	4.40	2.20
2,676	Fixed cast-iron shot for 2.95-inch subcaliber gun	3.09	8,268.84
200,000	Subcaliber ball cartridges, caliber .30 ... per 1,000	20.60	4,120.00
6,084	Subcaliber cartridge cases, caliber '.30, not packed ... do	7.25	44.11
	PART 1, CLASS 3, SECTION 6.		
1,150	Drill primers	.22	253.00
	Parts of drill primers:		
10,000	Bodies ... per 1,000	110.00	1,100.00
25,827	Button wires	43.90	1,133.81
52,777	Serrated wires with friction pellets	23.50	1,240.26
4,936	Fuses, base detonating, medium caliber	2.40	11,846.40
2	Fuses, base detonating, medium caliber, blank	2.00	4.00
1	Fuse, base detonating, medium caliber, dummy	....	2.00
1,363	Fuses, base detonating, major caliber	4.06	5,533.78
5	Fuses, base detonating, major caliber, dummy	3.50	17.50
1,500	Fuses, base percussion, medium and major caliber	.67	1,005.00
14	Fuses, 70-second, experimental	31.53	441.42
5,360	Primers, combination electric-friction ... per 1,000	337.08	1,806.75
3	Primers, combination electric-friction, empty	.45	1.35
100	Primers, 2-wire combination electric-friction, experimental. per 100	327.81	327.81
2,000	Primers, electric, for axial and radial vents ... per 1,000	109.50	219.00
3,198	Primers, obturating friction ... do	200.00	639.60
10	Primers, percussion, experimental	5.36	53.60
91,745	Primers, igniting, 20-grain ... per 1,000	34.42	3,157.86
10,000	Primers, igniting, 110-grain ... per 1,000	95.00	950.00
10	Primers, igniting, 110-grain, experimental	.22	2.20
10,000	Sensitive percussion primers, for use with Navy denotating fuse, per 1,000	22.80	228.00
266,375	Primers, percussion, 20-grain, saluting ... do	39.65	10,561.77
100	Primers, percussion, 20-grain, experimental	.04	4.00
37,900	Primers, percussion, 110-grain ... per 1,000	76.15	2,886.09
100	Primers, percussion, 110-grain, special	.08	8.00
50	Primers, percussion, for use with seacoast firing mechanism	.27	13.50
5	Primer bodies	.12	.60
50	Percussion caps for primer bodies	.14	7.00
6	Steel fuse seat plugs, for 10-inch A. P. shell	9.10	54.60
306	Steel fuse seat adapters	.18	55.08
16,605	Igniters ($\frac{1}{16}$-ounce) for 1-pounder subcaliber ammunition, per 1,000	26.95	447.50
5,780	Tin boxes for packing primers	.06	346.80
	PART 1, CLASS 4, SECTION 2.		
8	Front sights for 2.95-inch mountain gun	13.25	106.00
1	Front sight without bracket, for 2.95-inch mountain gun	....	5.20
4	Screws for front sights for 2.95-inch mountain gun	.20	.80
2,000	"D" rings for ammunition chests for pack outfit for 2.95-inch mountain gun ... per 1,000	66.40	132.80½
864	Machine screws .312 by 1.375 inches, for ammunition chests for pack outfit for 2.95-inch mountain gun ... per 100	1.58	13.65
1 pair	Canvas ammunition containers for 3-inch mountain howitzer ammunition, experimental ... per pair	10.00	10.00
	PART 1, CLASS 4, SECTION 3.		
70	Panoramic sights for 3-inch gun carriage	124.48	8,713.60
25	Panoramic sights for use on 3-inch Naval landing guns	123.35	3,083.75
	Parts of panoramic sights:		
14	Adjustable blocks for reticule cell	.42	5.88
3	Blocks in rotating prism	.23	.69
8	Dowels for worm box pin	.04	.32
21	Dowel pins for worm box knobs	.50	10.50
15	Dowel pins for sight shank	.12	1.80
7	Eye lens cells	.46	3.22

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3—Continued.		
	Parts of panoramic sights—Continued.		
48	Eyepiece elbows to shank screws	$3.25	$156.00
2	Field lens cells	.62	1.24
7	Field lens retaining springs	.13	.91
1	Hood (not finished)		11.82
11	Lower reflecting prisms	4.75	52.25
2	Movable index covers	1.73	3.46
7	Nuts for worm shaft	.17	1.19
1	Nut gear hub		6.47
10	Objective lenses	2.57	25.70
2	Objective lens cells	.82	1.64
8	Packing strips, lower reflecting prism	.26	2.08
27	Reticules	3.43	92.61
2	Rotating heads	4.30	8.60
4	Rotating prism holders	2.15	8.60
20	Rotating head prisms	2.36	47.20
30	Rotating prisms	5.79	173.70
2	Segments for prism supports	.68	1.36
9	Separator bars	.21	1.89
2	Shanks and supports	8.62	17.24
12	Springs for spring box	.18	2.16
2	Spring box sleeves for worm box	.14	.28
6	Spring box pins for worm box	.26	1.56
4	Springs for rotating head prism	.28	1.12
6	Spring boxes for worm	1.80	10.80
8	Supporting backs for prism	.53	4.24
4	Supporting sleeves for rotating prism	5.60	22.40
12	Thrust washers on worm shaft	.15	1.80
25	Unfinished azimuth circles	10.78	269.50
11	Window cells in rotating head (not finished)	.65	7.15
3	Worms	1.75	5.25
2	Worm boxes	3.29	6.58
5	Worm box eccentric levers	1.52	7.60
6	Worm box pins	.28	1.68
1	Worm index		1.69
1	Worm knob		.45
10	Washers for worm shaft	.15	1.50
120	Teat wrenches	.61	73.20
5	Range quadrants for 3-inch gun carriage	89.75	448.75
	Parts of range quadrants:		
50	Bracket fulcrums	.09	4.50
50	Fulcrum pins	.12	6.00
102	Inner friction disks	.97	98.94
20	Micrometer screws (partly finished)	1.19	23.80
50	Outer friction disks	1.19	59.50
75	Pinions and shafts	4.14	310.50
50	Quadrant brackets	9.64	482.00
25	Spring catches with handles	.97	24.25
35	Front sights, complete, for 3-inch and 4.7-inch gun carriages	15.10	528.50
	Parts of front sights for 3-inch gun carriage:		
1	Bracket		7.22
51	Spring catches	1.55	79.05
35	Rear sights, complete, for 3-inch gun carriage	185.30	6,485.50
	Parts of rear sights for 3-inch gun carriage:		
1	Bracket with nut and lock nut		2.20
50	Nuts for range strip screws	.18	9.00
51	Range strip screws	.17	8.67
25	Spring catch plungers with knobs	.22	5.50
6	Rear sights, complete, for 4.7-inch gun carriage	165.60	993.60
2	Sights, model of 1908, for use on 4.7-inch howitzer carriage, model of 1908	334.25	668.50
	PART 1, CLASS 4, SECTION 4.		
2	Sights, model of 1908, for use on 6-inch howitzer carriage, model of 1908	345.00	690.00
	PART 1, CLASS 4, SECTION 5.		
	Parts of subcaliber and drill cartridges, for 3-inch field gun:		
25	Bases for drill cartridges	1.72	43.00
149	Closing cap set screws	.04	5.96
174	Graduated rings	.37	64.38
222	Rings	.40	88.80
296	Ring screws	.04	11.84
444	Rotating pins	.18	79.92
296	Washers	.07	20.72
100	Drill cartridges for subcaliber cartridge and drill cartridge kits, for 3-inch field guns, models of 1902, 1904, 1905	10.44	1,044.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 9.		
7	Testing levels	$16.00	$112.00
7	Chests for testing levels	1.00	7.00
16	Electric flash lights with resistance and rubber tips, for use in illuminating scales, etc., of sights for mobile artillery	5.50	88.00
115	Hand fuse setters for 21-second combination fuses	15.90	1,828.50
15	Hand fuse setters for 31-second combination fuses	39.75	596.25
21	Carrying cases for hand fuse setters for 31-second combination fuses	7.92	166.32
	Parts of hand fuse setters:		
12	Clamp screws, complete, 1-inch ... per set	1.21	14.52
40	Ehrhardt corrector scales	.51	20.40
26	Range rings, not graduated	.70	18.20
240	Screws to hold handles of fuse setters ... per hundred	2.60	6.24
35	Bracket fuse setters for 21-second combination fuses	44.70	1,564.50
	Parts of bracket fuse setters:		
50	Blank filling pieces for corrector scale	.03	1.50
50	Corrector rings	2.78	139.00
50	Corrector worms with knob pins and washers	1.95	97.50
6	Range rings	1.40	8.40
1	Range worm	3.65	3.65
100	Worm case screws	.05	5.00
46	Range rings, graduated, for hand and bracket fuse setters	1.68	77.28
39	Fuse wrenches for 29-second combination fuses (old style)	6.00	234.00
	PART 1, CLASS 5, SECTION 1.		
1	Self-reading range finder	346.60	346.60
243	Weldon range finders, without leather cases	17.95	4,361.85
22	Prisms, for Weldon range finders (3 to a set) ... per set	6.40	140.80
59	Battery commander's telescopes, without tripods or carrying cases	212.02	12,509.18
	Parts of battery commander's telescopes:		
4	Lower prisms	3.00	12.00
150	Objective prism box screws	.04	6.00
59	Pin wrenches	.15	8.85
4	Porro erecting prisms, large	11.45	45.80
51	Screw drivers	.30	15.30
1	Slow motion screw, complete		.20
150	Spindle screws	.04	6.00
59	Teat wrenches	.60	35.40
18	Tripods without carrying cases	14.00	252.00
15	Tripod levels, complete	1.68	25.20
48	Battery commander's rulers, without cases	6.05	290.40
100	Strings for battery commander's rulers ... per hundred	2.20	2.20
3	Field Artillery plotters, model of 1907	198.00	594.00
	Parts of Field Artillery plotters:		
1	Aiming point index		.75
74	Frame brackets with springs	1.35	99.90
2	Gun arm support shoes	.20	.40
2	Leg catch cams with swivel locking pins and locking pin knobs	.80	1.60
3	Locking pin springs	.06	.18
1	Protractor		7.800
4	Screws, No. 5, for fastening protractor frame to gun arm	.05	.20
2	Swivel stud screws	.15	.30
74	Tilting rod supports	1.05	77.70
30	Tripod leg joints	.85	25.50
3	Tripod swivel studs	.20	.60
1	Slide ruler		41.00
3	Supports for observation telescopes, field, model of 1908	38.00	114.00
1	Altitude handwheel for Barr & Stroud range finder		22.85
	PART 1, CLASS 5 SECTION 3.		
	Components of flash targets for mobile artillery:		
60	Flash supports	.42	25.20
567	Powder charges	.22	124.74
66	Switches with wood screws	1.20	79.20
6	Switch stakes	.07	.42
1	Small balloon target, experimental		32.35
	PART 1, CLASS 5 SECTION 5.		
	Components of reloading and cleaning outfits for 4.7-inch gun:		
3	Bushings	3.62	10.86
3	Case holders	1.70	5.10
3	Powder measures	1.95	5.85
1	Storage chest		14.10

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 6, SECTION 2.		
500	Felt wads for saluting cases for 1.65-inch mountain gun, per 1,000...	$4.45	$2.23
23	Wooden boxes for packing cartridge cases for 2.95-inch mountain gun	.82	18.86
	PART 1, CLASS 6, SECTION 3.		
	Ammunition for 3-inch field guns, models of 1902 1904, and 1905:		
5,511	Fixed common steel shell	9.29	51,197.19
40	Common steel shell, empty, fitted with steel base covers and "Semple" tracers	3.60	144.00
232	High-explosive shrapnel	8.85	2,053.20
33,978	Fixed common shrapnel	9.27	314,976.06
284	Fixed common shrapnel, fitted with "Semple" tracers	9.77	2,774.68
1,726	Common shrapnel, loaded and fused	6.50	11,219.00
46	Common shrapnel, loaded, not fused	4.85	223.10
7	Common shrapnel, experimental	10.62	74.34
5	Shrapnel, not loaded, fitted with dummy fuses	5.60	28.00
1,650	Cartridge cases	.73	1,204.50
3,000 rds.	Fixed blank ammunition, saluting	1.30	3,900.00
46	Fixed cast-iron shell	4.35	200.10
25	Cast-iron shell, loaded and fused	4.35	108.75
48,325	Felt wads ... per 1,000	12.83	620.01
10	Wooden boxes for packing cartridge cases	1.60	16.00
260	Point plugs for 3-inch cast-iron shell ... per 100	20.90	54.34
360	Common shrapnel, 3.8-inch, not loaded or fused	11.40	4,104.00
58	Fixed cast-iron shell for 3.8-inch gun, model of 1907	6.10	353.80
720	Fixed common shrapnel for 4.7-inch gun	23.85	17,172.00
4	Common shrapnel, loaded, not fused for 4.7-inch gun	11.90	47.60
492	Common shrapnel, not loaded or fused, for 4.7-inch gun	15.49	7,621.08
2,592	Fixed common steel shell for 4.7-inch gun	29.74	77,086.08
1,490	Cartridge cases for 4.7-inch gun, model of 1906	2.75	4,097.50
	PART 1, CLASS 6, SECTION 4.		
18	Common shrapnel, 6-inch	51.27	922.86
348	Common shrapnel, 6-inch, not loaded or fused	34.60	12,040.80
4	High-explosive shrapnel, 6-inch	42.56	170.24
	PART 1, CLASS 6, SECTION 7.		
7,014	Fuses, 21-second combination	1.65	11,573.10
955	Fuses, 31-second combination	3.26	3,113.30
108	Sensitive point fuses	.70	75.60
1,848	Waterproof hoods, with soldering strips, for 21-second combination fuses	.05	92.40
4	Concussion plungers for 21-second combination fuses	.15	.60
	PART 1, CLASS 7, SECTION 1.		
2	Hardwood ramrods, for caliber .30 rifle	.50	1.00
	PART 1, CLASS 8, SECTION 1.		
71,462,500	Ball cartridges, caliber .30, model of 1906 ... per 1,000	26.95	1,925,914.38
2,000	Ball cartridges, caliber .30, model of 1906, 2,100 feet per second velocity ... per 1,000	30.85	61.70
57,000	Ball cartridges, caliber .30, model of 1906, packed in pasteboard boxes, for use in Gatling gun ... per 1,000	26.95	1,536.15
13,000	Ball cartridges, caliber .30, model of 1906, special powder, for erosion tests ... per 1,000	29.25	380.25
5,000	Ball cartridges, caliber .30, model of 1906, without propelling charges, for use in inspection of rifles ... per 1,000	20.00	100.00
180	Ball cartridges, caliber .30, model of 1906, hand loaded, special charges, marking etc ... per 100	20.50	36.90
7,500	High-pressure ball cartridges, caliber .30, model of 1906, for test of rifle chambers ... per 1,000	26.95	202.13
9,540,000	Blank cartridges, caliber .30, model of 1909 (utilizing fired shells), per 1,000	10.80	103,032.00
1,108,000	Blank cartridges, caliber .30, model of 1909 (using new material, per 1,000	18.60	20,608.80
332,380	Dummy cartridges, caliber .30, model of 1906 ... per 1,000	17.65	5,866.51
997,300	Guard cartridges, caliber .30, model of 1906 ... per 1,000	19.95	19,896.14
25,000	Guard cartridges, caliber .30, model of 1906, packed in pasteboard boxes, for use in Gatling gun ... per 1,000	19.95	498.75
1,200	Bullets, special points, for test ... per 1,000	79.00	94.80
52,414	Cartridge cases, caliber .30, primed, for model of 1906 ammunition, not packed ... per 1,000	7.25	380.00
586,188	Cartridge cases, caliber .30, not primed, for model of 1906 ammunition, not packed ... per 1,000	6.55	3,839.53

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 1, CLASS 8, SECTION 1—Continued.		
1,200	Cartridge cases, dummy, caliber .30, primed, for model of 1906 ammunition, not packed .... per 1,000..	$7.50	$9.00
50,578	Cartridge cases, dummy, caliber .30, not primed, for model of 1906 ammunition, not packed .... per 1,000..	6.80	343.93
34,600	Bullets, service, caliber .30 .... per 1,000..	4.85	167.81
150,399	Bandoleers, for packing ball cartridges, caliber .30, model of 1906, per 1,000	68.00	10,227.13
1,970,000	Cartridge clips, service .... per 1,000..	4.45	8,766.50
73,008	Springs for cartridge clips .... per 1,000..	1.09	79.58
175,086	Paper cartons for ball cartridges, caliber .30, model of 1906. per 1,000..	4.05	709.10
26	Paper cartons for ball cartridges, caliber .30, model of 1898. per 100 ...	1.71	.44
102	Paper cartons for blank cartridges, caliber .30, model of 1898, per 100	1.37	1.40
4	Paper cartons for gallery-practice cartridges, caliber .30, model of 1898	.01	.04
1	Display board showing the various stages in the manufacture of ball cartridges, caliber .30, model of 1906	....	70.50
	PART 1, CLASS 8, SECTION 2.		
7,000,500	Revolver ball cartridges, caliber .38 .... per 1,000..	10.35	72,455.18
1,018,780	Revolver blank cartridges, caliber .38 .... per 1,000..	8.10	8,252.12
1,000	Revolver blank cartridges, caliber .38 (special design), experimental .... per 1,000..	14.45	14.45
10,100	Revolver bullets, caliber .38 .... per 1,000..	2.30	23.23
3,000	Small arms cartridge primers, caliber .38 .... per 1,000..	.65	1.95
46,500	Cartridge cases, primed, for caliber .38, revolver ball ammunition, per 1,000	5.90	274.35
49,929	Cartridge cases, not primed, for caliber .38, revolver ball ammunition, not packed .... per 1,000..	5.25	262.13
10,100	Paper cartons for revolver ball cartridges, caliber .38 .... per 1,000..	8.60	86.86
4,074,000	Revolver ball cartridges, caliber .45, model of 1909 .... per 1,000..	12.40	50,517.60
10,000	Revolver ball cartridges, caliber .45, model of 1909, experimental, per 1,000	12.68	126.80
513,260	Revolver blank cartridges, caliber .45, model of 1909 ...... per 1,000..	10.80	5,543.21
24,428	Cartridge cases, primed, for caliber .45 revolver ball ammunition, not packed .... per 1,000..	7.30	178.32
74,850	Cartridge cases, not primed, for caliber .45 revolver ball ammunition, not packed .... per 1,000..	6.60	494.01
20	Paper cartons for revolver blank cartridges, caliber .45	.01	.20
11	Paper cartons for revolver blank cartridges, caliber .45	.01	.11
	PART 1, CLASS 8, SECTION 4.		
2,608	Rifle grenades, experimental	3.45	8,997.60
64	Rifle grenades, dummy, experimental	1.35	86.40
2	Rifle grenades, inert, experimental	2.96	5.92
5	Bandoleers for rifle grenades, experimental	.94	4.70
4,908	Cartridges for rifle grenades, experimental .... per 1,000..	20.48	100.52
185	Stems for rifle grenades, experimental	.40	74.00
35	Stems for Hale rifle grenades, experimental	.43	15.05
2,596	Hand grenades, experimental	2.26	5,866.96
56	Hand grenades, dummy, experimental	1.35	75.60
2	Hand grenades, inert, experimental	1.72	3.44
10	Bandoleers for hand grenades, experimental	1.08	10.80
	PART 1, CLASS 10, SECTION 2.		
1,000	Wax bullets for Colt's revolver, caliber .38 .... per 1,000..	2.30	2.30
12	False cartridges for Colt's revolver, caliber .38	.25	3.00
1	Decapping block for use with Colt's revolver, caliber .38	....	2.00
2	Hand shields for use with caliber .38 revolvers	.75	1.50
1	Capping tool for false cartridges for Colt's revolver, caliber .38	....	2.15
1	Decapping tool for false cartridges for Colt's revolver, caliber .38 ...	....	2.15
	PART 1, CLASS 10, SECTION 5.		
29,000	Aluminum identification tags .... per 1,000..	5.58	161.82
6,000	Paper seals .... do	.85	5.10
	PART 1, CLASS 10, SECTION 6.		
1	Self-reading range finder, experimental	....	589.85
	PART 1, CLASS 10, SECTION 7.		
2	1st velocity targets, complete	63.35	126.70
2	2d velocity targets, complete	100.38	200.76

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount
	PART 1, CLASS 10, SECTION 8.		
	Parts of bench reloading tools for ball cartridges, models of 1898 and 1906:		
5	Spindles, assembled	$1.00	$5.00
1	Frame for primer ejecting tool		3.80
5	Racks for slide of bullet inserting tool	3.70	18.50
3	Crimping tools for caliber .30 cartridges	158.75	476.25
50	Primer ejecting spindles for decapping and cleaning tools for caliber .30 cartridges, models of 1898 and 1906, and caliber .38 revolver cartridges	.80	40.00
1	Small brass loading funnel		1.10
1	Powder measure (to measure 154 grains of small arms powder)		.85
	PART 1, CLASS 10, SECTION 10.		
	Paint for projectiles (gallons):		
400	Black	.86	344.00
75	Blue gray	1.00	75.00
50	Dark buff	1.12	56.00
50	Deep yellow	1.20	60.00
100	Light olive green	1.12	112.00
90	Light Quaker drab	1.12	100.80
50	Light reddish brown	1.20	60.00
40	Light yellow	1.29	51.60
50	Olive green	.97	48.50
10	Quaker drab	1.18	11.80
5	Red	1.32	6.60
10	Red lead paint	1.36	13.60
50	Vermilion	1.24	62.00
80	Warm gray	1.07	85.60
1,009	Paint cans, 1-gallon	.11	110.99
56	Wooden boxes for packing paint, capacity five 1-gallon cans	.79	44.24
	PART 2, CLASS 2, SECTION 1.		
2	Triangles, 45 degrees, 36 inches long	1.17	2.34
2	Scales, 36 inches long	1.45	2.90
4	Dining arm chairs, walnut	16.45	65.80
12	Dining side chairs, walnut	14.05	168.60
126	Card racks for chronographs	1.65	207.90
21	Frames for holding chronographs and racks	9.90	207.90
	PART 2, CLASS 2, SECTION 2.		
1	Apparatus for making German 100° C. test of powder		61.50
1	Surveillance test apparatus		184.25
	Parts and accessories for chronograph set:		
1	Chronometer rod		16.00
1	Registrar		12.00
2	Registrar weights	1.25	2.50
2	Balance supports	10.50	21.00
2	Disjunctors	145.00	290.00
2	Rheostats	165.00	330.00
100	Split zinc tubes ...per 100	13.20	13.20
1	Switchboard		86.40
1	Expander		32.00
3	Pin wrenches	.30	.90
2	Opisometers	38.00	76.00
	PART 2, CLASS 3, SECTION 5.		
1	Special milling machine for use in the manufacture of copper pressure cylinders		620.50
1	Punch and die for seal holder for metallic ammunition boxes		26.50
	PART 2, CLASS 3, SECTION 7.		
2	Assembling presses for artillery ammunition	223.95	447.90
1	Attachment for disassembling 21-second combination fuses from shrapnel		92.50
19	Automatic hopper feeds, single, for small arms cartridge machines	140.00	2,660.00
6	Automatic hopper feeds, double, for draw presses for small arms cartridges	193.20	1.159.20
4	Automatic hopper feeds, quadruple, for draw presses for small arms cartridges	312.15	1.248.60
1	Bullet assembling machine for small-arms ammunition		643.90
1	Crimping machine for crimping waterproof hoods to shrapnel		445.20
1	Crimping press for 3-inch ammunition		112.15
1	Crimping machine for 3.8-inch and 4.7-inch ammunition		263.00
1	Machine for loading revolver ammunition, caliber .45		1,123.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 2, CLASS 3, SECTION 7—Continued.		
1	Machine for testing 3-inch shrapnel cases by air		$135.85
1	Multiple spindle automatic polishing machine		1,184.40
1	Punch and die for compressing bursting charges for use in 8-inch A. P. shot		511.95
	Tools for the manufacture of pedestal mounts for observation telescopes, model of 1908, viz:		
1	Reamer, 1.3-inch diameter		8.50
2	Counterbores		14.00
1	Cutter bar		8.00
6	Cutters		18.00
1	Base for mounting adj. screw guide		6.00
1	Slotting tool		3.50
1	Square thread tap, 1.5-inch, 6 threads per inch		12.00
1	U. S. standard tap, 4.1-inch, 6 threads per inch		12.00
1	Snap gauge, 4.35 inches		4.50
	Tools, jigs, and fixtures for use in the manufacture of telescopes for observation telescopes, model of 1908:		
1	Expansion tap for opening of focusing sleeve in telescope tube		18.00
1	Milling cutter for milling opening for focusing sleeve thread and shoulder on tube		14.60
1	Centering fixture for objective end of tube		26.00
1	Fixture for supporting sides of tube when milling prism opening		32.00
1	Fixture for eye end of tube when milling prism opening and tapping eye end, also boring holes for trunnions with two extra clamps, one support and one threaded centering plate for objective end		28.00
2	Pin gauges for prism opening in telescope	$4.00	8.00
1	Fixture for supporting tap when tapping end of tube		8.00
1	Mill for facing end of trunnion opening on tube		8.00
1	Flat drill for starting hole in telescope of tube		13.50
1	Fixture for objective end of tube when milling prism opening and tapping eye end, also for boring hole for trunnions		26.00
1	Fixture for drilling holes in objective end of shutter shaft		24.00
1	Fixture with prism cover for drilling two holes in tube for cover		26.00
1	Plug gauge for thread in eye end for focusing sleeve		8.00
1	Brass chuck for eye end of tube		16.50
3	Taps, $\frac{3}{16}$-inch, 32 threads per inch, for prism cover screws	1.00	3.00
1	Fixture for straddle milling sides of cover		27.00
1	Fixture for drilling screw holes in bottom of cover		18.00
1	Plug gauge for draw tube, $1\frac{11}{16}$ inches diameter, 16 threads per inch		14.00
1	Chuck for turning draw tube		25.00
1	Drilling jig for focusing nuts		17.00
1	Straddle milling fixture for focusing nuts		38.00
1	Lathe tool for cutting square thread in nuts		14.00
1	Lathe tool for cutting out center of nuts		14.00
1	Brass chuck for 24-power eye lens holder for thread		6.00
2	Brass chucks for 24-power eye lens holder for finishing end	6.00	12.00
1	Brass chuck for sleeve nut		14.00
1	Brass chuck for turning 12-power field lens holder, also for mounting lens		16.00
1	Fixture for drilling objective shutter		18.00
1	Spotting drill for reamer for objective shutter		10.00
1	End mill, $1\frac{3}{8}$ inches diameter, for prism holder		10.00
1	Boring cutter for roughing and finishing round opening in prism holder		15.00
1	Fixture for holding prism holders when milling prism openings		34.00
1	Fixture for drilling prism holder for screws and dowel pin		26.00
1	Fixture for holding prism holder when straddle milling lugs		38.00
1	Arbor used when milling opening in focusing sleeve for nut		24.00
1	Chuck for turning focusing sleeve		28.00
1	Reamer, 1.75 inches diameter		18.00
1	Small brass arbor for turning knob washers		8.00
1	Filing jig for handle		5.00
1	Fixture for bending finger grip		14.00
1	Ring gauge for thread, $1\frac{11}{16}$ inches diameter, 16 threads per inch		14.00
1	Threaded plug gauge for internal thread, 30 threads per inch		14.00
1	Chuck for turning eyepiece tubes		32.00
1	Ring gauge for thread, $3\frac{7}{16}$ inches diameter, 16 threads per inch		18.00
1	Chuck for turning after ring is threaded		24.00
1	Counterbore for trunnions		14.00
1	Chuck for boring and cutting square thread		32.00
1	Plug gauge for inside diameter		8.00
1	Plug gauge for square thread		10.00
1	Lathe tool for cutting square thread		8.00
1	Bending jig		18.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 2, CLASS 3, SECTION 7—Continued.		
	For impact testing machines:		
36	Casings	$1.00	$36.00
96	Dies	.08	7.68
96	Plugs	.06	5.76
96	Plungers	.62	59.52
96	Cup dies	.10	9.60
144	Caps .... per hundred	1.52	2.19
96	Vented plugs	.20	19.20
4	Strikers for drop weight	.75	3.00
4	Anvils	.20	.80
	PART 2, CLASS 3, SECTION 9.		
6	Taps, 0.065 inch diameter, 72 threads per inch, U. S. F.	.20	1.20
6	Taps, 0.084 inch diameter, 56 threads per inch, V thread	.20	1.20
	Taps, F. A. standard (2 to a set):		
6	0.062 inch diameter, 60 threads per inch .... per set	.40	2.40
6	0.08 inch diameter, 60 threads per inch .... do	.40	2.40
2	0.09 inch diameter, 43 threads per inch .... do	.50	1.00
6	0.1 inch diameter, 43 threads per inch .... do	.75	4.50
6	0.125 inch diameter, 43 threads per inch .... do	.75	4.50
3	0.156 inch diameter, 30 threads per inch .... do	1.00	3.00
3	0.187 inch diameter, 26 threads per inch .... do	1.00	3.00
5	Taps, 5-40 V standard (3 to a set) .... do	.45	2.25
	Dies, F. A. standard:		
4	0.062 inch diameter, 60 threads per inch	1.25	5.00
4	0.08 inch diameter, 60 threads per inch	1.25	5.00
2	0.09 inch diameter, 43 threads per inch	1.25	2.50
4	0.1 inch diameter, 43 threads per inch	1.25	5.00
4	0.125 inch diameter, 43 threads per inch	1.25	5.00
4	0.156 inch diameter, 30 threads per inch	1.25	5.00
4	0.187 inch diameter, 26 threads per inch	1.25	5.00
2	Dies, U. S. F. special, $\frac{7}{32}$ inch diameter, 24 threads per inch	1.50	3.00
2	Dies, W. & S. standard, 0.093 inch diameter, 48 threads per inch	.70	1.40
	PART 2, CLASS 4, SECTION 1.		
	Parts and accessories for cannon star gauge:		
	Drop points (3 to a set)—		
1	For 6 7-inches diameter .... per set		22.00
1	For 8 inches diameter .... do		23.00
1	For 13.75 inches diameter .... do		26.10
	Measuring points (4 to a set)—		
5	2.44, 2.46, 3.41, 3.71, 4.01 inches diameter (1 each) .... do	9.50	47.50
1	To measure from 2.25 to +.15 inch .... do		9.00
1	To measure from 2.40 to +.15 inch .... do		9.00
1	To measure from 2.55 to +.15 inch .... do		9.50
1	To measure from 2.7 to +.15 inch .... do		10.00
1	Head support for 1.457-inch gun		6.00
1	Head support for 2.24-inch gun		7.00
	Ring gauges—		
1	1.457 inches diameter		2.50
1	2.244 inches diameter		3.00
1	2.25 inches diameter		3.00
1	2.40 inches diameter		3.25
1	2.46 inches diameter		3.25
1	2.55 inches diameter		3.25
1	2.61 inches diameter		3.25
1	2.7 inches diameter		3.50
1	3.15 inches diameter		3.75
1	3.41 inches diameter		3.75
1	3.56 inches diameter		4.00
1	3.71 inches diameter		4.00
1	3.86 inches diameter		4.00
1	4.01 inches diameter		4.25
1	4.16 inches diameter		4.25
1	Rifle guide for 2.24-inch gun		8.00
4	Steel washers	.50	2.00
	PART 2, CLASS 4, SECTION 2.		
1	Set screw for clinometer clamp		3.15

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 2, CLASS 4, SECTION 3.		
	Gauges for 5-inch A. P. projectiles:		
6	Band diameter, maximum	$8.00	$48.00
6	Band diameter, minimum	8.00	48.00
6	Band seat diameter, maximum and minimum	10.50	63.00
6	Position of band, maximum and minimum	3.50	21.00
6	Band profile, maximum and minimum	4.56	27.36
6	Band seat width, maximum and minimum	4.00	24.00
	Gauges for 6-inch A. P. projectiles:		
7	Band diameter, maximum	8.50	59.50
7	Band diameter, minimum	8.50	59.50
7	Band seat diameter, maximum and minimum	12.00	84.00
7	Position of band, maximum and minimum	3.50	24.50
7	Band profile, maximum and minimum	5.25	36.75
7	Band seat width, maximum and minimum	4.50	31.50
	Gauges for 6-inch cast-iron shell:		
1	For cylindrical portion of rotating band, maximum		10.50
1	For cylindrical portion of rotating band, minimum		10.50
1	For portion of rotating band of greatest diameter, maximum		10.50
1	For portion of rotating band of greatest diameter, minimum		10.50
1	Profile gauge		8.05
	Gauges for 8-inch A. P. projectiles:		
6	Band diameter, maximum	10.00	60.00
6	Band diameter, minimum	10.00	60.00
6	Band seat diameter, maximum and minimum	14.00	84.00
6	Position of band, maximum and minimum	3.50	21.00
6	Band profile, maximum and minimum	5.50	33.00
6	Band seat width, maximum and minimum	4.50	27.00
	Gauges for 10-inch A. P. projectiles:		
7	Band diameter, maximum	12.50	87.50
7	Band diameter, minimum	12.50	87.50
7	Band seat diameter, maximum and minimum	14.50	101.50
7	Position of band, maximum and minimum	5.00	35.00
7	Band profile, maximum and minimum	8.00	56.00
7	Band seat width, maximum and minimum	7.00	49.00
	Gauges for 10-inch cast-iron shell:		
1	Bourrelet diameter, maximum		13.25
1	Bourrelet diameter, minimum		13.25
1	Rear of band and body maximum and minimum		16.00
1	Band profile and band seat width		14.00
1	Position of band		5.50
1	Projectile profile		32.00
1	Thickness of wall caliper		22.50
1	Thickness of wall caliper test piece, maximum and minimum		3.00
1	Thickness of base		5.50
1	Depth of cavity		18.00
1	Base thread diameter, maximum		9.00
1	Base thread diameter, minimum		14.00
1	Band seat diameter, maximum and minimum		16.00
2	Band diameter, maximum	13.25	26.50
2	Band diameter, minimum	13.25	26.50
1	Chest for above gauges		14.00
1	Maximum gauge for plug hole of 10-inch cast-iron projectile	24.80	24.80
1	Minimum gauge for plug hole of 10-inch cast-iron projectile	24.80	24.80
	Gauges for 12-inch A. P. projectiles:		
7	Band diameter, ring, maximum	14.00	98.00
7	Band diameter, ring, minimum	14.00	98.00
7	Band profile, maximum and minimum	8.50	59.50
7	Band seat diameter, snap, maximum and minimum	16.00	112.00
7	Band seat width, maximum and minimum	7.00	49.00
7	Position of band, maximum and minimum	6.50	45.50
1	Seat gauge for combination fuse, for 12-inch cast-iron mortar shell		25.00
7	Gauges for tracer seat, maximum, for 8, 10, and 12 inch projectiles	8.00	56.00
7	Gauges for tracer seat, minimum, for 8, 10, and 12 inch projectiles	12.00	84.00
1	Templet for 14-inch armor-piercing projectiles		12.80
1	Inspection gauge for 3-inch (15-pounder) cartridge cases, model of 1903		86.25
	Inspection gauges for 3-inch (15-pounder) shrapnel:		
1	Test piece for eccentricity gauge		8.50
1	Test piece for thickness of base gauge		6.00
1	Female-thread gauge for thread end of tube		8.50
1	Head gauge for rear end of shrapnel		12.00
1	Length of case gauge		8.50
1	Minimum thread gauge for head		16.00
	For seat gauges for combination electric and friction primers:		
2	Taper plug gauges	2.62	5.24
2	Maximum diameter gauges	2.62	5.24
2	Minimum diameter gauges	2.62	5.24

Annual statement of manufactures for the fiscal year ended June 30, 1911, at Frankford Arsenal, Philadelphia, Pa.—Continued.

Number.	Articles.	Price.	Amount.
	PART 2, CLASS 4, SECTION 4.		
2	Star gauges for U. S. magazine rifle, caliber .30, model of 1903, chambered for 1906 ammunition	$106.50	$213.00
	PART 2, CLASS 4, SECTION 5.		
1	Inspection gauges for caliber .30 ball cartridges.... per set		155.25
5	Fixed gun rests for U. S. magazine rifle, model of 1903	161.00	805.00
4	Fixed rests for caliber .38 and .45 revolvers	92.90	371.60
1	Pressure gauge for inspection of caliber .38 revolver ball cartridges		153.25
1	Pressure gauge for inspection of caliber .45 revolver ball cartridges		139.40
3	Pressure gauges and mounts for caliber .30 ball cartridges, model of 1906	261.00	783.00
3	Pressure gauges without mounts for caliber .30 ball cartridges, model of 1906	71.05	213.15
7	Small arms pressure piston gauges	6.50	45.50
7	Small arms pressure piston seat gauges, maximum	6.50	45.50
7	Small arms pressure piston seat gauges, minimum	6.50	45.50
84	Pistons for pressure gauges for small arms ammunition, model of 1906	3.30	277.20
1	Bullet profile gauge for ball cartridges, caliber .30, model of 1906		6.20
1	Head trimming gauge for use in verifying the diameter and thickness of the head in ball cartridges, caliber .30, model of 1906		63.10
	PART 2, CLASS 4, SECTION 6.		
1	Thread gauge for inspecting screw on the base of W. & S. azimuth instrument, model of 1910		8.20
	Total		3,142,645.72

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.

No.	Articles.	Price	Amount.
	PART 1, CLASS 1, SECTION 1.		
	For 8-inch guns, model of 1888 and modifications:		
32	Circuit-breaker contact pieces	$1.00	$32.00
76	Circuit-breaker contact-piece insulations	.20	15.20
68	Circuit-breaker contact-piece screws	.21	14.28
80	Circuit-breaker contact-piece screw insulations	.13	10.40
32	Dust covers	5.00	160.00
197	Dust-cover screws	.20	39.40
2	Gas check pads	3.95	7.90
1	Obturator nut clamping screw		.75
2	Rotating crank lock plates, lower	4.24	8.48
1	Rotating crank nut		3.00
1	Rotating crank nut pin		.60
52	Rotating crank lock springs	.40	20.80
3	Rotating crank pinions	28.15	84.45
32	Safety bar slides	3.50	112.00
10	Split rings, front	15.00	150.00
7	Split rings, rear	15.00	105.00
11	Translating rollers	34.10	375.10
22	Tray back latch catches	8.75	192.50
10	Tray latch bodies	23.50	235.00
13	Tray latch pivots	1.82	23.66
8	Tray lock levers	5.00	40.00
1	Tray lock lever pivot		1.30
5	Tray lock pins	1.50	7.50
5	Screw drivers, bar, for breech plate screws	2.00	10.00
5	Screw drivers, bar, for breech plate oil hole screws	2.00	10.00
5	Screw drivers, bar, for hinge pin oil hole screws	1.50	7.50
	For 10-inch guns model of 1888 and modifications:		
5	Breech plate oil hole screws	.11	.55
10	Circuit-breaker contact pieces	1.00	10.00
10	Circuit-breaker contact-piece insulations	.20	2.00
20	Circuit-breaker contact-piece screws	.25	5.00
20	Circuit-breaker contact-piece screw insulations	.15	3.00
15	Gas check pads	4.50	67.50
10	Intermediate pinions	12.00	120.00
2	Obturator nuts with clamping screws	23.34	46.68
8	Rotating crank lock plates, lower	3.27	26.16

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 1——Continued.		
	For 10-inch guns, model of 1888 and modifications—Continued.		
7	Rotating crank lock plates, upper	$2.99	$20.93
20	Rotating crank pinions	15.19	303.80
1	Safety bar slide		5.42
1	Safety bar slide groove pallet		8.36
8	Translating rollers	38.55	308.40
2	Translating studs	28.32	56.64
1	Tray back latch body		24.00
3	Tray back latch catches	8.50	25.50
1	Tray latch handle, female		1.25
1	Tray latch handle, male		1.25
1	Tray latch handle pin		.10
1	Tray lock lever		5.75
1	Tray lock lever pivot		3.50
1	Tray lock link		6.50
1	Tray lock link pin		1.78
1	Tray lock pin		1.75
1	Tray lock link		6.50
1	Tray lock pin nut and pin		.84
5	Screw drivers, bar, for tray back latch, pivot screws, etc	1.50	7.50
	For 10-inch guns, model of 1895 and modifications:		
7	Circuit-breaker contact pieces	.57	3.99
7	Circuit-breaker contact-piece insulations	.13	.91
12	Circuit-breaker contact-piece screws	.13	1.56
12	Circuit-breaker contact-piece screw insulations	.10	1.20
2	Compound gears	67.65	135.30
2	Hinge pin caps	17.47	34.94
1	Locking bolt spring		.30
4	Safety bar slides	3.00	12.00
2	Split rings, rear	13.25	26.50
2	Split rings, front	13.25	26.50
1	Circuit-breaker contact piece, for 10-inch gun, model of 1900		2.47
	For 12-inch guns, model of 1888 and modifications:		
6	Breech plate oil hole screws	.11	.66
6	Gas check pads	7.66	45.96
1	Pilot crank		6.69
1	Rotating crank lock bolt		4.50
5	Rotating crank lock plates, lower, new design	3.84	19.20
4	Rotating crank lock plates, upper	3.92	15.68
1	Rotating crank sleeve screw		.47
1	Rotating crank sleeve washer		4.50
5	Translating rollers	42.75	213.75
2	Translating studs	24.11	48.22
15	Tray spring bolt springs	4.00	60.00
	For 12-inch guns, model of 1895 and modifications:		
13	Circuit-breaker contact pieces	1.00	13.00
13	Circuit-breaker contact-piece insulations	.20	2.60
23	Circuit-breaker contact-piece screws	.26	5.98
23	Circuit-breaker contact-piece screw insulations	.14	3.22
3	Compound gears	53.67	161.01
27	Gas check pads	3.60	97.20
1	Primer flame baffle		15.00
8	Safety bar slides	3.86	30.88
1	Safety bar slide lock and screws		57.38
1	Safety firing device		269.48
4	Slide springs	.38	1.52
1	Split ring, front		31.75
1	Split ring, rear		31.75
1	Tray latch		30.00
2	Wrenches, obturator nut	16.99	33.98
	For 12-inch guns, model of 1900:		
2	Tray latches	14.25	28.50
1	Fixed tray for powder chamber, complete with screws		312.62
1	14-inch gun, model of 1907-MI		39,932.10
	For 14-inch guns, model of 1907 and modifications:		
3	Gas check pads	6.31	18.93
2	Split rings, front	45.35	90.70
1	Safety firing device		205.09
1	Split ring, rear		39.89
	PART 1, CLASS 1, SECTION 2.		
11	Lanyard buttons, for 6-pounder Driggs-Seabury gun, model of 1900	5.40	59.40
	For 2.24-inch (6-pounder) guns, model of 1900:		
1	Locking bolt spring screw		.05
2	Locking bolt springs	2.96	5.92
1	Pawl		1.60
1	Pawl rivet		.09
1	Trigger pin		.75
5	Lanyards	2.58	12.90

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued.		
1	2.24-inch (6-pounder) gun, model of 1910	$2,637.13	$2,637.13
	For 2.24-inch (6-pounder) guns, Driggs-Schroeder, Mark III:		
3	Drill washer supports	3.20	9.60
4	Lanyards	2.25	9.00
	For 3-inch (15-pounder) guns, model of 1898:		
2	Breech mechanisms	501.25	1,002.50
2	Carrier plates	226.39	452.78
3	Sets of parts for strengthening the carrier plates	23.18	69.54
92	Extractors	16.04	1,475.68
16	Firing pins	4.00	64.00
11	Firing springs	2.00	22.00
10	Locking bolts	2.75	27.50
8	Locking bolt springs	.23	1.84
12	Plunger pins	.20	2.40
17	Plunger springs	.14	2.38
14	Safety catches and pins	2.79	39.06
10	Safety catch springs	.25	2.50
5	Sears	8.00	40.00
10	Sear latches and taper split pins	3.25	32.50
10	Sear springs	.83	8.30
13	Block rotating stops and screws (hardened steel studs)	2.64	34.32
13	Hardened steel pallets and screws	2.64	34.32
100	Lanyards and connections	2.39	239.00
	For 3-inch (15-pounder) guns, model of 1902:		
1	Breech block pivot		11.00
1	Breech block pivot nut and pin		2.70
60	Cable couplings, A	1.00	60.00
28	Cable hooks	.88	24.64
26	Cable sleeves	.75	19.50
1	Cocking stud block		23.03
2	Cocking stud block screws	.80	1.60
6	Cocking stud springs	.30	1.80
22	Cocking stud spring washers	.10	2.20
28	Contact pin body insulations	.10	2.80
33	Contact pin head insulations	.15	4.95
32	Contact pin nut insulations	.15	4.80
26	Contact slide plug insulations, N	.25	6.50
26	Contact slide plug insulations, O	.25	6.50
28	Contact slide plug insulations, P	.25	7.00
1	Cross head		22.34
2	Cross head and link pivot pins	1.68	3.36
2	Cross head and link pivot pin taper pins	.56	1.12
15	Firing cables, V	3.25	48.75
23	Firing cables, V1	6.00	138.00
24	Firing cables, V2	2.50	60.00
18	Firing pins	4.00	72.00
8	Firing pin insulations	.88	7.04
30	Firing pin insulation collars	.33	9.90
26	Firing pin insulation washers	.10	2.60
1	Firing-pin nut		2.00
2	Firing-pin nuts and taper pins	3.50	7.00
1	Firing-pin nut taper pins		.20
1	Firing-pin shoulder, rear		3.00
1	Firing-pin sleeve	18.04	18.04
2	Firing-pin springs	1.75	3.50
27	Hand-lever latch plungers, nuts, and pins	.30	8.10
23	Hand-lever latch springs	.25	5.75
1	Hinge pin		8.52
2	Latches	14.19	28.38
5	Latch springs	1.14	5.70
1	Link		13.40
1	Link pivot		20.10
1	Link-pivot bushing		4.46
1	Link-pivot nut and pin		3.35
1	Link-pivot pin		.75
3	Link-pivot pins and latch seats	2.91	8.73
3	Link pivots with taper pins	10.00	30.00
2	Locking-screw heads	3.41	6.82
2	Locking-screw taper pins	.20	.40
28	Plungers	.25	7.00
30	Plunger contact pins and nuts	.30	9.00
52	Standard cable contact plugs	.30	15.60
52	Standard cable contact plug insulations	.20	10.40
74	Standard plug insulation washers	.10	7.40
13	Triggers	11.49	149.37
26	Trigger-pin collars and pins	5.50	143.00
5	Trigger-pin collar pins	.60	3.00
5	Trigger springs	.80	4.00
10	Lanyards	1.90	19.00
1	Wrench, firing, and trigger pins		3.30

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued.		
5	3-inch (15-pounder) guns, model of 1903	$2,803.50	$14,017.50
	For 3-inch (15-pounder) guns, model of 1903:		
17	Cocking levers	2.64	44.88
59	Extractors	13.28	783.52
17	Firing cases	21.35	362.95
17	Firing pins	3.58	60.86
17	Firing springs	.85	14.45
17	Firing-spring followers	2.04	34.68
5	Firing mechanisms, complete	31.22	156.10
6	Latch springs	.41	2.46
1	Operating bar	25.00	25.00
49	Pallets	2.13	104.37
17	Sears	.86	14.62
17	Sear springs	.12	2.04
5	Trigger shafts	6.16	30.80
27	Trigger-shaft detents	.07	1.89
70	Packing pieces for socket wrench for filling plugs for armament chest	.20	14.00
4	Armament chests for 3-inch (15-pounder) guns, model of 1903, and barbette carriage, model of 1903	25.42	101.68
2	Main bolts for 4-inch Driggs-Schroeder gun	25.45	50.90
	For 4.72-inch gun, Armstrong:		
2	Cam spindle screws	.20	.40
52	Carrier latch screws, small	.20	10.40
2	Extractor screws	.20	.40
2	Lanyard rings	3.73	7.46
2	Operating-lever pivot split pins	.05	.10
2	Operating-link split pins	.05	.10
2	Safety cam plate screws	.20	.40
6	Sear caps	2.25	13.50
1	Sear spring	1.46	1.46
2	Sliding block pivot spline screws	.20	.40
2	Sliding block oil hole screws	.20	.40
	For 5-inch guns, model of 1897:		
35	Cable clamps and pins	1.20	42.00
6	Cable-clamp pins	.05	.30
17	Circuit-breaker contact pieces	3.00	51.00
16	Circuit-breaker housings	2.00	32.00
18	Contact-screw insulations	.10	1.80
20	Firing cables, short	1.00	20.00
1	Firing mechanism	132.80	132.80
18	Firing leaves	10.68	192.24
17	Firing leaf pivots	1.00	17.00
17	Firing leaf pivot pins	.50	8.50
3	Gear segments	86.18	258.54
42	Gear segment screws	.45	18.90
35	Hinge pin catches and screws	1.00	35.00
34	Housing spline screws	.75	25.50
35	Latch lever springs	.05	1.75
34	Pinions	17.63	599.42
4	Safety bars	5.75	23.00
18	Safety bar operating studs	.55	9.90
14	Slide catches	2.00	28.00
6	Slide stops	.25	1.50
4	Slide stop housings	.10	.40
1	Spindle		50.00
18	Spindle key screws	1.00	18.00
8	Spindle nuts with clamping screws	3.50	28.00
19	Spindle nut clamping screws	.20	3.80
5	Front split rings	6.00	30.00
5	Split rings, rear	6.00	30.00
5	Split rings, small	4.00	20.00
	For 5-inch guns, model of 1900:		
12	Breech block stop screws	.20	2.40
21	Cable clamps and pins	1.00	21.00
3	Cable clamp pins	.05	.15
10	Circuit breaker contact pieces	4.40	44.00
11	Circuit breaker contact piece screws	.10	1.10
20	Circuit breaker contact piece screw insulations	.10	2.00
4	Circuit breaker contact pins	.15	.60
12	Circuit-breaker housings	2.00	24.00
14	Circuit breaker housing insulations	.25	3.50
3	Contact clip housing nuts and insulations	.20	.60
6	Contact-clip washers	.10	.60
11	Ejectors	3.00	33.00
14	Firing cables, short	2.00	28.00
5	Firing leaves	20.00	100.00
8	Firing-leaf springs	1.50	12.00
14	Gas-check pads	2.86	40.04
20	Gear-segment screws	.50	10.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued.		
	For 5-inch guns, model of 1900—Continued.		
20	Hinge pin catches and screws	$1.00	$20.00
20	Latch lever springs	.10	2.00
21	Pinions	17.63	370.23
5	Slides	30.00	150.00
12	Slide catches	3.00	36.00
3	Slide stops	1.75	5.25
10	Spindle ball washers	10.00	100.00
10	Spindle nuts with clamping screws	5.75	57.50
12	Spindle nut clamping screws	.50	6.00
10	Split rings, front	10.00	100.00
10	Split rings, rear	10.00	100.00
10	Split rings, small	2.40	24.00
3	Friction springs for 5-inch barbette carriage, model of 1903	3.59	10.77
	For 6-inch guns, model of 1897:		
29	Cable clamps and pins	1.50	43.50
4	Cable clamp pins	.10	.40
5	Circuit breaker contact pins	.50	2.50
14	Circuit breaker contact pieces	3.00	52.00
10	Circuit breaker contact piece insulations	.20	2.00
5	Circuit breaker contact springs	.10	.50
15	Circuit breaker housings	1.20	18.00
21	Circuit breaker housing insulations	.15	3.15
7	Contact clip housing insulations	.10	.70
9	Contact clip housing nuts and insulations	.15	1.35
18	Contact screw insulations	.10	1.80
15	Ejectors	2.50	37.50
18	Firing cables, short	1.00	18.00
13	Firing leaves	10.00	130.00
13	Firing leaf pivots	1.00	13.00
14	Firing leaf pivot pins	.50	7.00
11	Firing leaf springs	1.25	13.75
26	Firing leaf spring screws	.05	1.30
5	Gas check pads	5.00	25.00
28	Gear segment screws	.20	5.60
30	Hinge pin catches and screws	1.00	30.00
30	Housing spline screws	.45	13.50
28	Latch lever springs	.40	11.20
30	Pinions	17.63	528.90
9	Safety bars	4.42	39.78
19	Safety bar operating studs	.86	16.34
10	Slide catches	2.00	20.00
3	Slide stops	.50	1.50
6	Slide stop housings	.50	3.00
3	Slide stop nuts and pins	.10	.30
3	Slide stop springs	.10	.30
14	Spindle nuts with clamping screws	4.15	58.10
16	Spindle nut clamping screws	.15	2.40
15	Spindle key screws	.50	7.50
9	Front split rings	12.67	114.03
9	Rear split rings	13.45	121.05
7	Small split rings	6.82	47.74
5	Screwdrivers, bar, for obturator nut and pinion pivot screws	4.45	22.25
	For 6-inch guns, model of 1900:		
1	Block carrier		206.13
21	Breech block stop screws	.25	5.25
41	Cable clamps and pins	1.00	41.00
5	Cable clamp pins	.10	.50
44	Cable clamp screws	.10	4.40
11	Contact clip housing nuts and insulations	.20	2.20
21	Contact screw insulations	.10	2.10
19	Circuit breaker contact pieces	5.25	99.75
15	Circuit breaker contact piece insulations	.35	5.25
20	Circuit breaker contact piece screws	.10	2.00
19	Circuit breaker contact piece screw insulations	.10	1.90
6	Circuit breaker contact pins	.15	.90
7	Circuit breaker contact springs	.15	1.05
20	Circuit breaker housings	2.20	44.00
33	Circuit breaker housing insulations	.30	9.90
21	Ejectors	3.50	73.50
26	Firing cables, short	2.41	62.66
4	Firing leaves	10.00	40.00
8	Firing leaf springs	2.00	16.00
47	Gas check pads	3.57	167.79
7	Gear segments	83.09	581.63
48	Gear segment screws	.68	32.64
40	Hinge pin catches and screws	1.35	54.00
40	Latch lever springs	.64	25.60
1	Loading tray pivot		10.50

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued.		
	For 6-inch guns, model of 1900—Continued.		
48	Pinions	$17.63	$846.24
3	Pinion pivot pins	.80	2.40
11	Slides	12.55	138.05
20	Slide catches	3.75	75.00
8	Slide stop nuts and pins	.20	1.60
20	Spindle nuts with clamping screws	8.50	170.00
9	Split rings, front	10.00	90.00
9	Split rings, rear	10.00	90.00
9	Split rings, small	5.00	45.00
	For 6-inch guns, model of 1903:		
30	Carrier bushings	7.00	210.00
16	Contact clips	2.75	44.00
20	Contact-clip housings	3.00	60.00
16	Contact-clip housing nuts and insulations	.05	.80
16	Contact-clip housing insulations	.25	4.00
17	Contact-clip washers	1.75	29.75
140	Ejectors	7.82	1,094.80
8	Ejector pivots	.50	4.00
19	Electric-cable terminals	1.00	19.00
46	Firing cables	2.20	101.20
1	Firing-cable bracket		6.27
62	Firing-cable bracket screws	.25	15.50
13	Firing leaves	13.23	171.99
19	Firing-leaf pivots	.50	9.50
20	Firing-leaf pivot pins	1.01	20.20
16	Firing-leaf springs	.56	8.96
38	Gas-check pads	1.95	74.10
29	Hinge-lug bushings	4.00	116.00
30	Hinge-lug pallets	12.93	387.90
28	Hinge-pin nuts and pins	.50	14.00
28	Housings	23.00	644.00
77	Latches	8.43	649.11
29	Lever-latch bolt springs	.38	11.02
1	Loading tray		44.43
2	Obturator-spindle springs	5.50	11.00
1	Rack lock		8.06
1	Rack-lock handle		6.50
28	Rollers	1.80	50.40
28	Roller axles	1.30	36.40
1	Shock absorber		164.72
28	Slides	12.50	350.00
29	Spindle keys	22.20	643.80
28	Split rings, front	14.50	406.00
28	Split rings, rear	14.50	406.00
28	Split rings, small	3.50	98.00
1	6-inch gun, model of 1905		8,954.38
	For 6-inch guns, model of 1905:		
6	Carrier latch springs	.50	3.00
2	Contact-clip housing insulations	.30	.60
2	Contact-housing insulations	.25	.50
4	Contact-pin "A" insulations	.30	1.20
5	Contact-pin "B" insulations	.30	1.50
2	Contact-pin "B" insulation washers	.60	1.20
3	Contact-pin insulation washers	.10	.30
2	Contact-plunger springs	.20	.40
2	Ejectors	4.50	9.00
4	Firing cables, short	2.88	11.52
2	Firing leaves	12.00	24.00
2	Firing-leaf springs	2.00	4.00
2	Firing levers	4.50	9.00
2	Firing-lever springs	5.00	10.00
2	Firing-lever spring screws	.15	.30
17	Gas-check pads	2.85	48.45
2	Hinge-pin nuts and pins	.80	1.60
2	Lever-latch bolt springs	.50	1.00
10	Obturator-spindle springs	7.97	79.70
2	Plunger detents	.30	.60
2	Safety plungers	2.80	5.60
2	Safety-plunger springs	.12	.24
2	Slides	30.30	60.60
2	Slide catches with springs	7.30	14.60
2	Slide stops	.80	1.60
2	Spindle keys	19.50	39.00
1	Split ring, front		34.43
1	Split ring, rear		34.43
2	Tray-latch springs	.30	.60
3	6-inch guns, model of 1908	5,907.77	17,723.31
2	6-inch guns, model of 1908 MI	7,184.66	14,369.32

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 2—Continued		
1	6-inch gun, model of 1908 MII		$5,515.43
	For 6-inch guns, model of 1908 and modifications:		
7	Circuit-breaker contact pieces	$7.60	53.20
7	Circuit-breaker contact pins	.45	3.15
7	Circuit-breaker contact springs	.10	.70
7	Contact clips	.75	5.25
7	Contact-clip housings	3.20	22.40
7	Contact-clip housing insulations	.10	.70
7	Contact-clip housing nuts and insulations	.30	2.10
7	Contact-clip washers	.05	.35
7	Contact forks	1.00	7.00
7	Ejectors	4.25	29.75
7	Electric-cable terminals	1.00	7.00
11	Firing cables, short	3.00	33.00
7	Firing leaves	14.00	98.00
7	Firing-leaf springs	2.30	16.10
7	Firing-leaf spring screws	.10	.70
11	Gas-check pads	3.72	40.92
11	Gear-segment screws	.25	2.75
7	Hinge-pin catches	3.25	22.75
7	Obturator-spindle springs	3.80	26.60
7	Slides	20.00	140.00
7	Slide catches	3.70	25.90
7	Slide-catch springs	.10	.70
7	Slide stops	3.80	26.60
7	Slide-stop screws	.25	1.75
7	Slide-stop springs	.10	.70
7	Split rings, front	19.00	133.00
7	Split rings, rear	19.00	133.00
7	Split rings, small	3.87	27.09
11	Tray latches	3.20	35.20
11	Tray-latch springs	.10	1.10
11	Tray-latch stops	.20	2.20
7	Wrenches and screw drivers, combined	.65	4.55
3	Screw drivers, bar, for spindle key, gear-segment screws, etc	4.97	14.91
3	Wrenches, tit, for obturator	2.46	7.38
2	Armament chests for 6-inch guns, models of 1905 and 1908, on 6-inch disappearing carriage L. F., model of 1905 MI	31.14	62.28
1	Armament chest for 6-inch guns, model of 1908 MII, and 6-inch barbette carriage, model of 1910		63.36
	For 5-inch and 6-inch guns, all models:		
167	Breechblock oil-hole screws	.21	35.07
2	Lanyards for 6-inch guns on barbette or disappearing carriages	.93	1.86
1	Primer-flame baffle for 6-inch guns		9.54
	PART 1, CLASS 1, SECTION 3.		
	For 12-inch mortars, model of 1886:		
5	Circuit-breaker contact pieces	.20	1.00
5	Circuit-breaker contact-piece insulations	.04	.20
10	Circuit-breaker contact-piece screws	.05	.50
10	Circuit-breaker contact-piece screw insulations	.03	.30
2	Rotating crank-gear nuts	1.81	3.62
1	Translating crank		31.22
4	Translating studs	10.79	43.16
	For 12-inch mortars, model of 1890 and modifications:		
11	Circuit breaker contact pieces	2.00	22.00
10	Circuit breaker contact piece insulations	.25	2.50
20	Circuit breaker contact piece screws	.30	6.00
20	Circuit breaker contact piece screw insulations	.25	5.00
28	Clip springs	.24	6.72
50	Gas check pads	4.00	200.00
5	Hinge pin oil hole screws	.40	2.00
1	Rotating crank		49.95
15	Rotating crank lock housings	2.50	37.50
1	Split ring, front		20.00
2	Translating cranks	29.09	58.18
7	Translating rollers	47.27	330.89
4	Tray back latch bodies	15.00	60.00
4	Tray latch bodies	27.25	109.00
3	Tray latch handles, male	1.50	4.50
1	Tray latch handle, female		1.50
1	Tray latch handle pin		.10
1	Tray spring bolt shoe		5.00
1	Set of parts for equipping one steel mortar and one C. I. mortar with safety bar catch	75.37	75.37
5	Screw drivers, bar, for lower pinion nuts, for armanent chest for 12-inch mortar, model of 1890	2.90	14.50

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 3—Continued.		
7	Sets of parts required to convert 12-inch mortar carriages, model of 1896, to model of 1896 MI	$60.15	$421.05
72	Steel top carriages for 12-inch mortar carriage, model of 1896 MI	990.45	71,312.40
	For 12-inch mortars, model of 1890, on 12-inch motar carriage, model of 1896 MI:		
3	Crank pins	31.41	94.23
3	Nuts for crank pins	10.00	30.00
3	Taper pins for crank pins	1.05	3.15
	For 12-inch mortars, wire-wrapped, model of 1908:		
12	Circuit breaker contact pieces	9.00	108.00
12	Clip springs	.25	3.00
12	Contact piece screws	1.50	18.00
1	Filling-in ring		36.75
14	Gas check pads	3.64	51.96
12	Obturator spindle springs	4.00	48.00
12	Split rings, front	15.00	180.00
12	Split rings, rear	15.00	180.00
12	Split rings, small	3.00	36.00
12	Tray latch lock bolts	.25	3.00
12	Tray latch operating studs	1.00	12.00
12	Tray latch springs	.25	3.00
	PART 1, CLASS 1, SECTION 4.		
1	Rear adapter shoe for 1-pounder subcaliber gun adapted to 10-inch gun, model of 1900		20.00
	For 1-pounder subcaliber guns for 12-inch guns, models of 1888 and 1895:		
2	Adapter clamp wedges	3.00	6.00
2	Center supports	18.00	36.00
2	Clamp wedge screws	2.00	4.00
2	Front adapters	26.50	53.00
2	Rear adapters	27.36	54.72
1	Hasp button, complete with screws, for chest for subcaliber gun, fixtures and accessories for 12-inch gun, model of 1900		5.07
1	Rear adapter shoe for 1-pounder subcaliber gun adapted for 12-inch gun, model of 1900		20.00
	For 75 m/m subcaliber gun, for 12-inch mortar, models of 1890 and 1890 MI:		
3	Gun extractors	44.69	134.07
2	Wrenches, securing screw	3.92	7.84
	For 1-pounder subcaliber guns:		
2	Vent cleaners	.75	1.50
2	Clamping wrenches	6.14	12.28
1	Gauge		8.80
	PART 1, CLASS 1, SECTION 5.		
1	Pneumatic firing device		262.04
	PART 1, CLASS 1, SECTION 6.		
	For 3-inch W. I. saluting guns:		
3	Breechblocks	215.47	646.41
2	Extractors	16.45	32.90
103	Firing arms	1.06	109.18
207	Firing pins	4.14	856.98
107	Firing springs	.30	32.10
10	Locking screws	4.40	44.00
10	Operating shafts with handles	14.00	140.00
155	Sears	2.00	310.00
100	Screws for holding the locking screw on the operating shaft	.11	11.00
51	Spring shoes	2.18	111.18
5	Stop bolts	3.50	17.50
75	Trigger shafts	4.84	363.00
104	Trigger shaft detents	.12	12.48
5	Accessory storage chests	15.00	75.00
100	Lanyards	2.00	200.00
15	Cap squares for mount	3.44	51.60
6	Foundation bolts, with nuts and washers for mount	2.31	13.86
	PART 1, CLASS 1, SECTION 7.		
	For 1-pounder Hotchkiss guns:		
2	Crank carriers	20.00	40.00
2	Crank carrier locks and pins	12.22	24.44
2	Front sights	8.36	16.72
1	Operating lever		37.65
1	Hand extractor		2.75

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No	Articles.	Price.	Amount.
	PART 1, CLASS 1, SECTION 8.		
	For armament chests for seacoast guns and mortars:		
100	Handles for bar screwdrivers	$0.25	$25.00
101	Hooks for lanyards	.25	25.25
14	Screws for bar screwdriver blades	.27	3.78
8	Tools for cleaning vent	4.35	34.80
10	Wrenches, obturator nut clamp screw	2.00	20.00
5	Wrenches, obturator nut	3.00	15.00
	For 8-inch and 10-inch guns, model of 1888, and 12-inch mortars, model of 1890:		
20	Tray latch handles, female	.48	9.60
20	Tray latch handles, male	.48	9.60
20	Tray latch handle pins	.05	1.00
	For seacoast firing mechanism, model of 1903:		
18	Circuit breaker contact pins	.27	4.86
56	Contact clips	2.10	117.60
52	Contact clip housings	.68	35.36
30	Contact clip housing nut insulations	.10	3.00
22	Contact clip housing washers	.10	2.20
40	Contact forks	.70	28.00
10	Ejectors	2.00	20.00
20	Electric cable terminals	.70	14.00
13	Firing cables for 10-inch gun, model of 1888	3.13	40.69
9	Firing cables for 10-inch guns, model of 1895	2.99	26.91
2	Firing cables for 10-inch guns, model of 1900	2.17	4.34
6	Firing cables for 12-inch guns, model of 1888	2.65	15.90
12	Firing cables for 12-inch guns, model of 1895	2.60	31.20
2	Firing cables for 12-inch guns, model of 1900	2.17	4.34
1	Firing cable for 14-inch gun, model of 1907		2.17
5	Firing cables for 12-inch mortars, model of 1886	2.75	13.75
25	Firing cables for 12-inch mortars, model of 1890	2.58	64.50
5	Firing cables for 12-inch mortars, model of 1908	3.24	16.20
42	Firing leaves	11.02	462.84
2	Firing leaf pivots	.75	1.50
43	Firing leaf pivot pins	.77	33.11
7	Hinged collars	6.78	47.46
4	Housings	23.24	92.96
23	Slides	14.27	328.21
69	Slide catches	4.10	282.90
2	Slide catches with springs and rivets	4.25	8.50
45	Slide catch springs and rivets	.75	33.75
1	Slide stop		.25
10	Slide stop housings	.15	1.50
19	Wrenches and screw drivers, combined	.60	11.40
	PART 1, CLASS 2, SECTION 3.		
	For mortar trunnion boring and threading machine:		
1	Guide ring		35.00
1	Hognose		56.00
3	Recessing tools	3.30	9.90
3	Threading tools	3.30	9.90
	PART 1, CLASS 3, SECTION 6.		
	For 12-inch D. P. shell, 824 pounds:		
1	Base plug		59.49
107	Caps	2.06	220.42
391	Caps for 12-inch D. P. shell, 1,046 pounds	1.52	594.32
	PART 1, CLASS 4, SECTION 2.		
1	Stop bolt for 12-pounder Hotchkiss mountain gun		12.00
	For 2.95-inch mountain gun:		
12	Carrier axis pins with split pins	1.75	21.00
12	Extractors	15.00	180.00
12	Extractor axis pins with split pins	1.50	18.00
25	Firing pin points	1.50	37.50
12	Guide plates	8.00	96.00
17	Hand levers	27.18	462.06
12	Hand lever axis pins with split pins	1.50	18.00
12	Hand lever catches	8.00	96.00
3	Locking bolts	5.88	17.64
480	Split pins for mechanism	.05	24.00
2	Triggers	8.65	17.30
24	Triggers, complete	10.42	250.08
15	Trigger levers	6.00	90.00
1	Extractor for 3-inch mountain howitzer, model of 1907		16.72

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 3.		
	For 3-inch field guns, model of 1902:		
12	Breech mechanisms complete	$377.82	$4,533.84
13	Caps	2.60	33.80
14	Cocking levers	3.50	49.00
25	Cocking lever pins	.25	6.25
17	Cover locking pins	1.00	17.00
5	Extractors	20.00	100.00
5	Extractor levers	.40	2.00
13	Firing pins	6.00	78.00
13	Firing pin springs	.15	1.95
10	Hinge pins	4.00	40.00
12	Hinge pin catches	1.00	12.00
13	Latch bolts	1.35	17.55
13	Latch bolt springs	.05	.65
21	Lever latches	8.92	187.32
28	Lever latch pins	1.18	33.04
75	Lever latch springs	.20	15.00
449	Oil hole spring covers with screws	.14	62.86
26	Operating levers	26.37	685.62
1	Operating lever guide, complete		10.44
15	Operating lever latch catches	2.00	30.00
15	Operating lever pivots	4.00	60.00
14	Pivot keys	.60	8.40
12	Sears	2.00	24.00
343	Sear and trigger springs	.12	41.16
5	Studs for repairing recoil lug	.51	2.55
64	Taper pins for trigger arm	.05	3.20
15	Trigger arms	10.00	150.00
17	Trigger arm sleeves	3.00	51.00
30	3-inch field guns, model of 1905	1,281.67	38,450.10
	For 3-inch field guns, models of 1904 and 1905:		
93	Block latches	2.26	210.18
99	Block latch springs	.10	9.90
33	Breech mechanisms, complete	291.36	9,614.88
115	Firing pins	4.26	489.90
94	Firing springs	.33	31.02
91	Firing spring sleeves	1.72	156.52
98	Hinge pin catches	.94	92.12
1	Lever latch		11.00
1	Lever latch catch		1.09
1	Lever latch pivot		2.00
94	Lever latch springs	.10	9.40
98	Locking bolts with nuts and pins	.95	93.10
90	Locking bolt springs	.13	11.70
82	Oil hole covers and screws	.15	12.30
1	Operating lever		25.00
88	Pallet pins	.07	6.16
2	Rear line sight screws	.84	1.68
119	Sears	1.59	189.21
190	Trigger shaft detents	.10	19.00
	For 3.2-inch guns, model of 1897:		
108	Gas check pads	1.00	108.00
270	Hinge pin securing screws	.15	40.50
227	Latch cover screws	.25	56.75
123	Latch pins	3.00	369.00
144	Latch studs	1.00	144.00
108	Lever handle pin screws	.10	10.80
135	Spindle nut spline screws	.10	13.50
127	Spindle springs	1.00	127.00
101	Split rings, front	3.00	303.00
101	Split rings, rear	3.00	303.00
60	Split rings, small	1.00	60.00
131	Vent covers	2.18	285.58
131	Vent cover screws	.16	20.96
150	Vent cover pallet screws	.28	42.00
4	4.7-inch field howitzers, model of 1908	1,090.33	4,361.32
	PART 1, CLASS 4, SECTION 4.		
5	4.7-inch guns, model of 1906	4,360.97	21,804.85
	For 4.7-inch guns, model of 1906:		
1	Breech mechanism, complete		1,200.00
4	Block latches	2.50	10.00
4	Block latch springs	.10	.40
4	Firing pins	5.00	20.00
4	Firing springs	.40	1.60
4	Firing spring sleeves	3.00	12.00
5	Front sights	1.33	6.65
4	Hinge pin catches	2.00	8.00

Annual statement of manufactures for the fiscal year ended June 30, 1911, at the Watervliet Arsenal, Watervliet, N. Y.—Continued.

No.	Articles.	Price.	Amount.
	PART 1, CLASS 4, SECTION 4—Continued.		
	For 4.7-inch guns, model of 1905—Continued.		
4	Lever latch springs	$0.10	$0.40
4	Locking bolts with nuts and pins	.50	2.00
4	Locking bolt springs	.10	.40
4	Sears	3.00	12.00
4	Tray latch springs	.10	.40
8	Trigger shaft detents	.10	.80
19	6-inch siege howitzers, model of 1908	2,558.34	48,608.46
24	Lifting eye bolts for 5-inch siege gun, model of 1890, and 7-inch siege howitzer, model of 1890	3.00	72.00
13	Brackets for Scott telescopic sight for 7-inch siege howitzer, model of 1890.	13.24	172.12
	PART 2, CLASS 2, SECTION 1.		
4	Drawing cabinets	55.87	223.48
	PART 2, CLASS 4, SECTION 1.		
1	Set of tools, jigs and fixtures for use in manufacturing 4, 6-inch guns, wire-wrapped, model of 1908	3,612.17	3,612.17
1	Set of jigs, tools and fixtures for use in manufacturing 12-inch mortars, wire-wrapped, model of 1908	10,049.79	10,049.79
1	Set of tools, jigs and templets for use in manufacturing 4.7-inch field howitzers, model of 1908	5,455.54	5,455,54
	For use in manufacturing 6-inch siege howitzers, model of 1908:		
1	Set of tools, jigs and templets	6,668.87	6,668.87
1	Set of fixtures	3,004.28	3,004.28
	Total		373,900.03

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 230.

IMPORTATION OF ILLUMINATING AND FOG-SIGNAL APPARATUS.

LETTER

FROM

THE SECRETARY OF COMMERCE AND LABOR,

RECOMMENDING

THE PASSAGE OF AN ACT TO PROVIDE FOR THE IMPORTATION OF ILLUMINATING AND FOG-SIGNAL APPARATUS FOR THE LIGHTHOUSE SERVICE FREE OF DUTY.

December 6, 1911.—Referred to the Committee on Ways and Means and ordered to be printed.

Department of Commerce and Labor,
Office of the Secretary,
Washington, December 2, 1911.

Dear Sir: I have the honor to recommend that the necessary legislation be enacted to provide for the importation free of duty of illuminating and fog-signal apparatus and lighthouse appliances, and necessary parts thereof, required for use in the Lighthouse Service.

The sundry civil act of March 3, 1893 (27 Stat., 575), under the appropriation "Supplies of lighthouses," provided "that lenses and lens glass for the use of the Lighthouse Establishment may be imported free of duty." A similar provision was repeated in the sundry civil acts of August 18, 1894 (28 Stat., 376), and March 2, 1895 (28 Stat., 917), since which time it has been omitted from the annual appropriation acts, and the Comptroller of the Treasury has held (7 Comp. Dec. 838) that this proviso "must be construed to be limited in its operation to the particular appropriation of which it forms a part."

Since the date of the decision just cited a duty of 45 per cent ad valorem has been collected on illuminating and fog-signal apparatus imported for the use of the Lighthouse Service, which duty entails a considerable draft on the appropriations for this branch of the Government. Many of the articles that are customarily imported and which are embraced in the proposed legislation are such as it is not practicable to obtain in the United States, and it is accordingly considered advisable, in order to secure the most economical administration of the Lighthouse Service, that such articles of illuminating and fog-signal apparatus and appliances as are imported for its use be admitted free of duty.

A draft of a proposed bill intended to accomplish this purpose is inclosed herewith.

Respectfully, CHARLES NAGEL, *Secretary.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES,
Washington, D. C.

Draft of proposed bill.

A BILL To provide for the importation of illuminating and fog-signal apparatus or the Lighthouse Service free of duty.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter illuminating and fog-signal apparatus and lighthouse appliances, and necessary parts thereof, for the use of the Lighthouse Service may be imported free of duty.

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EXCHANGE OF PRINTED MATTER WITH DANISH PARLIAMENT.

LETTER FROM THE DANISH PARLIAMENT TO THE HOUSE OF REPRESENTATIVES OF THE UNITED STATES.

December 7, 1911.—Referred to the Committee on Foreign Affairs and ordered to be printed.

Rigsdagen,
Copenhagen, October 28, 1911.

The President of the House of Representatives.

Sir: We hereby have the honor to inform you that the general office of the Danish Parliament has organized, on the lines of what already takes place in several countries, a special office charged with the regular exchanging of the various printed matters of Danish and foreign parliaments.

It would, of course, be of great importance to the legislative work of our country if we could obtain for the use of this office the printed matter of the Congress, such as bills, amendments, etc., as well as the reports, schedules, etc., relating to those, and we should be very obliged if you would instruct those concerned to send by-and-by to this newly established office the above-named printed matter of the House of Representatives.

In return we will instruct the Danish office to forward to the House of Representatives all the printed matter of the Danish Parliament, which will be accompanied by an abstract in the French language.

We remain, sir, yours, faithfully,

Gavi,
President of the Landsting.
A. Thomsen,
President of the Folketing.

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62D CONGRESS } HOUSE OF REPRESENTATIVES { DOCUMENT
2d Session } { No 248

MESSAGE

OF THE PRESIDENT OF THE UNITED STATES

ON

FOREIGN RELATIONS

DECEMBER 7, 1911

Referred to the Committee on Foreign Affairs and ordered to be printed

WASHINGTON
1911

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

MESSAGE.

To the Senate and House of Representatives:

The relations of the United States with other countries have continued during the past twelve months upon a basis of the usual good will and friendly intercourse.

ARBITRATION.

The year just passed marks an important general movement on the part of the Powers for broader arbitration. In the recognition of the manifold benefits to mankind in the extension of the policy of the settlement of international disputes by arbitration rather than by war, and in response to a widespread demand for an advance in that direction on the part of the people of the United States and of Great Britain and of France, new arbitration treaties were negotiated last spring with Great Britain and France, the terms of which were designed, as expressed in the preamble of these treaties, to extend the scope and obligations of the policy of arbitration adopted in our present treaties with those Governments. To pave the way for this treaty with the United States, Great Britain negotiated an important modification in its alliance with Japan, and the French Government also expedited the negotiations with signal good will. The new treaties have been submitted to the Senate and are awaiting its advice and consent to their ratification. All the essentials of these important treaties have long been known, and it is my earnest hope that they will receive prompt and favorable action.

CLAIM OF ALSOP & CO. SETTLED.

I am glad to report that on July 5 last the American claim of Alsop & Co. against the Government of Chile was finally disposed of by the decision of His Britannic Majesty George V, to whom, as *amiable compositeur,* the matter had been referred for determination. His Majesty made an award of nearly $1,000,000 to the claimants, which was promptly paid by Chile. The settlement of this controversy has happily eliminated from the relations between the Republic of Chile and the United States the only question which for two decades had given the two foreign offices any serious concern and makes possible the unobstructed development of the relations of friendship which it has been the aim of this Government in every possible way to further and cultivate.

ARBITRATIONS—PANAMA AND COSTA RICA—COLOMBIA AND HAITI.

In further illustration of the practical and beneficent application of the principle of arbitration and the underlying broad spirit of conciliation, I am happy to advert to the part of the United States in facilitating amicable settlement of disputes which menaced the peace between Panama and Costa Rica and between Haiti and the Dominican Republic.

Since the date of their independence, Colombia and Costa Rica had been seeking a solution of a boundary dispute, which came as an heritage from Colombia to the new Republic of Panama, upon its beginning life as an independent nation. Although the disputants had submitted this question for decision to the President of France under the terms of an arbitration treaty, the exact interpretation of the provisions of the award rendered had been a matter of serious disagreement between the two countries, both contending for widely different lines even under the terms of the decision. Subsequently and since 1903 this boundary question had been the subject of fruitless diplomatic negotiations between the parties. In January, 1910, at the request of both Governments the agents representing them met in conference at the Department of State and subsequently concluded a protocol submitting this long-pending controversy to the arbitral judgment of the Chief Justice of the United States, who consented to act in this capacity. A boundary commission, according to the international agreement, has now been appointed, and it is expected that the arguments will shortly proceed and that this long-standing dispute will be honorably and satisfactorily terminated.

Again, a few months ago it appeared that the Dominican Republic and Haiti were about to enter upon hostilities because of complications growing out of an acrimonious boundary dispute which the efforts of many years had failed to solve. The Government of the United States, by a friendly interposition of good offices, succeeded in prevailing upon the parties to place their reliance upon some form of pacific settlement. Accordingly, on the friendly suggestion of this Government, the two Governments empowered commissioners to meet at Washington in conference at the State Department in order to arrange the terms of submission to arbitration of the boundary controversy.

CHAMIZAL ARBITRATION NOT SATISFACTORY.

Our arbitration of the Chamizal boundary question with Mexico was unfortunately abortive, but with the earnest efforts on the part of both Governments which its importance commands, it is felt that an early practical adjustment should prove possible.

LATIN AMERICA.

VENEZUELA.

During the past year the Republic of Venezuela celebrated the one hundredth anniversary of its independence. The United States sent, in honor of this event, a special embassy to Caracas, where the cordial reception and generous hospitality shown it were most gratifying as a further proof of the good relations and friendship existing between that country and the United States.

MEXICO.

The recent political events in Mexico received attention from this Government because of the exceedingly delicate and difficult situation created along our southern border and the necessity for taking measures properly to safeguard American interests. The Government of the United States, in its desire to secure a proper observance and enforcement of the so-called neutrality statutes of the Federal Government, issued directions to the appropriate officers to exercise a diligent and vigilant regard for the requirements of such rules and laws.

Although a condition of actual armed conflict existed, there was no official recognition of belligerency involving the technical neutrality obligations of international law.

On the 6th of March last, in the absence of the Secretary of State, I had a personal interview with Mr. Wilson, the ambassador of the United States to Mexico, in which he reported to me that the conditions in Mexico were much more critical than the press dispatches disclosed; that President Diaz was on a volcano of popular uprising; that the small outbreaks which had occurred were only symptomatic of the whole condition; that a very large per cent. of the people were in sympathy with the insurrection; that a general explosion was probable at any time, in which case he feared that the 40,000 or more American residents in Mexico might be assailed, and that the very large American investments might be injured or destroyed.

After a conference with the Secretary of War and the Secretary of the Navy, I thought it wise to assemble an Army division of full strength at San Antonio, Tex., a brigade of three regiments at Galveston, a brigade of Infantry in the Los Angeles district of southern California, together with a squadron of battleships and cruisers and transports at Galveston, and a small squadron of ships at San Diego. At the same time, through our representative at the City of Mexico, I expressed to President Diaz the hope that no apprehensions might result from unfounded conjectures as to these military maneuvers, and assured him that they had no significance which should cause concern to his Government.

The mobilization was effected with great promptness, and on the 15th of March, through the Secretary of War and the Secretary of the Navy, in a letter addressed to the Chief of Staff, I issued the following instructions:

> "It seems my duty as Commander in Chief to place troops in sufficient number where, if Congress shall direct that they enter Mexico to save American lives and property, an effective movement may be promptly made. Meantime, the movement of the troops to Texas and elsewhere near the boundary, accompanied with sincere assurances of the utmost good-will toward the present Mexican Government and with larger and more frequent patrols along the border to prevent insurrectionary

expeditions from American soil, will hold up the hands of the existing Government and will have a healthy moral effect to prevent attacks upon Americans and their property in any subsequent general internecine strife. Again, the sudden mobilization of a division of troops has been a great test of our Army and full of useful instruction, while the maneuvers that are thus made possible can occupy the troops and their officers to great advantage.

"The assumption by the press that I contemplate intervention on Mexican soil to protect American lives or property is of course gratuitous, because I seriously doubt whether I have such authority under any circumstances, and if I had I would not exercise it without express congressional approval. Indeed, as you know, I have already declined, without Mexican consent, to order a troop of Cavalry to protect the breakwater we are constructing just across the border in Mexico at the mouth of the Colorado River to save the Imperial Valley, although the insurrectos had scattered the Mexican troops and were taking our horses and supplies and frightening our workmen away. My determined purpose, however, is to be in a position so that when danger to American lives and property in Mexico threatens and the existing Government is rendered helpless by the insurrection, I can promptly execute congressional orders to protect them, with effect.

"Meantime, I send you this letter, through the Secretary, to call your attention to some things in connection with the presence of the division in the Southwest which have doubtless occurred to you, but which I wish to emphasize.

"In the first place, I want to make the mobilization a first-class training for the Army, and I wish you would give your time and that of the War College to advising and carrying out maneuvers of a useful character, and plan to continue to do this during the next three months. By that time we may expect that either Ambassador Wilson's fears will have been realized and chaos and its consequences have ensued, or that the present Government of Mexico will have so readjusted matters as to secure tranquillity—a result devoutly to be wished. The troops can then be returned to their posts. I understood from you in Washington that Gen. Aleshire said that you could probably meet all the additional expense of this whole movement out of the present appropriations if the troops continue in Texas for three months. I sincerely hope this is so. I observe from the newspapers that you have no blank cartridges, but I presume that this is an error, or that it will be easy to procure those for use as soon as your maneuvers begin.

"Second. Texas is a State ordinarily peaceful, but you can not put 20,000 troops into it without running some risk of a collision between the people of that State, and especially the Mexicans who live in Texas near the border and who sympathize with the insurrectos, and the Federal soldiers. For that reason I beg you to be as careful as you can to prevent friction of any kind. We were able in Cuba, with the army of pacification there of something more than 5,000 troops, to maintain them for a year without any trouble, and I hope you can do the same thing in Texas. Please give your attention to this, and advise all the officers in command of the necessity for very great circumspection in this regard.

"Third. One of the great troubles in the concentration of troops is the danger of disease, and I suppose that you have adopted the most modern methods for the preventing and, if necessary, for stamping out epidemics. That is so much a part of a campaign that it hardly seems necessary for me to call attention to it.

"Finally, I wish you to examine the question of the patrol of the border and put as many troops on that work as is practicable, and more than are now engaged in it, in order to prevent the use of our borderland for the carrying on of the insurrection. I have given assurances to the Mexican ambassador on this point.

"I sincerely hope that this experience will always be remembered by the Army and Navy as a useful means of education, and I should be greatly disappointed if it resulted in any injury or disaster to our forces from any cause. I have taken a good deal of responsibility in ordering this mobilization, but I am ready to answer for it if only you and those under you use the utmost care to avoid the difficulties which I have pointed out.

"You may have a copy of this letter made and left with Gen. Carter and such other generals in command as you may think wise and necessary to guide them in their course, but to be regarded as confidential."

I am more than happy to here record the fact that all apprehensions as to the effect of the presence of so large a military force in Texas proved groundless; no disturbances occurred; the conduct of the troops was exemplary and the public reception and treatment of them was all that could have been desired, and this notwithstanding the presence of a large number of Mexican refugees in the border territory.

From time to time communications were received from Ambassador Wilson, who had returned to Mexico, confirming the view that the massing of American troops in the neighborhood had had good effect. By dispatch of April 3, 1911, the ambassador said:

> "The continuing gravity of the situation here and the chaos that would ensue should the constitutional authorities be eventually overthrown, thus greatly increasing the danger to which American lives and property are already subject, confirm the wisdom of the President in taking those military precautions which, making every allowance for the dignity and the sovereignty of a friendly state, are due to our nationals abroad.
>
> "Charged as I am with the responsibility of safeguarding these lives and property, I am bound to say to the department that our military dispositions on the frontier have produced an effective impression on the Mexican mind and may, at any moment, prove to be the only guaranties for the safety of our nationals and their property. If it should eventuate that conditions here require more active measures by the President and Congress, sporadic attacks might be made upon the lives and property of our nationals, but the ultimate result would be order and adequate protection."

The insurrection continued and resulted in engagements between the regular Mexican troops and the insurgents, and this along the border, so that in several instances bullets from the contending forces struck American citizens engaged in their lawful occupations on American soil.

Proper protests were made against these invasions of American rights to the Mexican authorities. On April 17, 1911, I received the following telegram from the governor of Arizona:

> "As a result of to-day's fighting across the international line, but within gunshot range of the heart of Douglas, five Americans wounded on this side of the line. Everything points to repetition of these casualties on to-morrow, and while the Federals seem disposed to keep their agreement not to fire into Douglas, the position of the insurrectionists is such that when fighting occurs on the east and southeast of the intrenchments people living in Douglas are put in danger of their lives. In my judgment radical measures are needed to protect our innocent people, and if anything can be done to stop the fighting at

Agua Prieta the situation calls for such action. It is impossible to safeguard the people of Douglas unless the town be vacated. Can anything be done to relieve situation, now acute?"

After a conference with the Secretary of State, the following telegram was sent to Governor Sloan, on April 18, 1911, and made public:

"Your dispatch received. Have made urgent demand upon Mexican Government to issue instructions to prevent firing across border by Mexican federal troops, and am awaiting reply. Meantime I have sent direct warning to the Mexican and insurgent forces near Douglas. I infer from your dispatch that both parties attempt to heed the warning, but that in the strain and exigency of the contest wild bullets still find their way into Douglas. The situation might justify me in ordering our troops to cross the border and attempt to stop the fighting, or to fire upon both combatants from the American side. But if I take this step, I must face the possibility of resistance and greater bloodshed, and also the danger of having our motives misconstrued and misrepresented, and of thus inflaming Mexican popular indignation against many thousand Americans now in Mexico and jeopardizing their lives and property. The pressure for general intervention under such conditions it might not be practicable to resist. It is impossible to foresee or reckon the consequences of such a course, and we must use the greatest self-restraint to avoid it. Pending my urgent representation to the Mexican Government, I can not therefore order the troops at Douglas to cross the border, but I must ask you and the local authorities, in case the same danger recurs, to direct the people of Douglas to place themselves where bullets can not reach them and thus avoid casualty. I am loath to endanger Americans in Mexico, where they are necessarily exposed, by taking a radical step to prevent injury to Americans on our side of the border who can avoid it by a temporary inconvenience."

I am glad to say that no further invasion of American rights of any substantial character occurred.

The presence of a large military and naval force available for prompt action, near the Mexican border, proved to be most fortunate under the somewhat trying conditions presented by this invasion of American rights. Had no movement theretofore taken place, and because of these events it had been necessary then to bring about the mobilization, it must have had sinister significance. On the other hand, the presence of the troops before and at the time of the unfortunate killing and wounding of American citizens at Douglas, made clear that the restraint exercised by our Government in regard to this occurrence was not due to a lack of force or power to deal with it promptly and aggressively, but was due to a real desire to use every means possible to avoid direct intervention in the affairs of our neighbor, whose friendship we valued and were most anxious to retain.

The policy and action of this Government were based upon an earnest friendliness for the Mexican people as a whole, and it is a matter of gratification to note that this attitude of strict impartiality as to all factions in Mexico and of sincere friendship for the neighboring nation, without regard for party allegiance, has been generally recognized and has resulted in an even closer and more sympathetic understanding between the two Republics and a warmer regard one for the other. Action to suppress violence and restore tranquillity throughout the Mexican Republic was of peculiar interest to this Government, in that it concerned the safeguarding of American life and property in that country. The Government of the United States had occasion to accord permission for the passage of a body of Mexican rurales through Douglas, Arizona, to Tia Juana, Mexico, for the suppression of general lawlessness which had for some time existed in the region of northern Lower California. On May 25, 1911, President Diaz resigned, Señor de la Barra was chosen provisional President. Elections for President and Vice President were thereafter held throughout the Republic, and Señor Francisco I. Madero was formally declared elected on October 15 to the chief magistracy. On November 6 President Madero entered upon the duties of his office.

Since the inauguration of President Madero a plot has been unearthed against the present Government, to begin a new insurrection. Pursuing the same consistent policy which this administration has adopted from the beginning, it directed an investigation into the conspiracy charged, and this investigation has resulted in the indictment of Gen. Bernardo Reyes and others and the seizure of a number of officers and men and horses and accoutrements assembled upon the soil of Texas for the purpose of invading Mexico. Similar proceedings had been taken during the insurrection against the Diaz Government resulting in the indictments and prosecution of persons found to be engaged in violating the neutrality laws of the United States in aid of that uprising.

The record of this Government in respect of the recognition of constituted authority in Mexico therefore is clear.

CENTRAL AMERICA—HONDURAS AND NICARAGUA TREATIES PROPOSED.

As to the situation in Central America, I have taken occasion in the past to emphasize most strongly the importance that should be attributed to the consummation of the conventions between the Republics of Nicaragua and of Honduras and this country, and I again earnestly recommend that the necessary advice and consent of the Senate be accorded to these treaties, which will make it possible for these Central American Republics to enter upon an era of genuine economic national development. The Government of Nicaragua which has already taken favorable action on the convention, has found it necessary, pending the exchange of final ratifications, to enter into negotiations with American bankers for the purpose of securing a temporary loan to relieve the present financial tension. In connection with this temporary loan and in the hope of consummating, through the ultimate operation of the convention, a complete and lasting economic regeneration, the Government of Nicaragua has also decided to engage an American citizen as collector general of customs. The claims commission on which the services of two American citizens have been sought, and the work of the American financial adviser should accomplish a lasting good of inestimable benefit to the prosperity, commerce, and peace of the Republic. In considering the ratification of the conventions with Nicaragua and Honduras, there rests with the United States the heavy responsibility of the fact that their rejection here might destroy the progress made and consign the Republics concerned to still deeper submergence in bankruptcy, revolution, and national jeopardy.

PANAMA.

Our relations with the Republic of Panama, peculiarly important, due to mutual obligations and the vast interests created by the canal, have continued in the usual friendly manner, and we have been glad to make appropriate expression of our attitude of sympathetic interest in the endeavors of our neighbor in undertaking the development of the rich resources of the country. With reference to the internal political affairs of the Republic, our obvious concern is in the maintenance of public peace and constitutional order, and the fostering of the general interests created by the actual relations of the two countries, without the manifestation of any preference for the success of either of the political parties.

THE PAN AMERICAN UNION.

The Pan American Union, formerly known as the Bureau of American Republics, maintained by the joint contributions of all the American nations, has during the past year enlarged its practical work as an international organization, and continues to prove its usefulness as an agency for the mutual development of commerce, better acquaintance, and closer intercourse between the United States and her sister American republics.

THE FAR EAST.

THE CHINESE LOANS.

The past year has been marked in our relations with China by the conclusion of two important international loans, one for the construction of the Hukuang railways, the other for the carrying out of the currency reform to which China was pledged by treaties with the United States, Great Britain, and Japan, of which mention was made in my last annual message.

It will be remembered that early in 1909 an agreement was consummated among British, French, and German financial groups whereby they proposed to lend the Chinese Government funds for the construction of railways in the Provinces of Hunan and Hupeh, reserving for their nationals the privilege of engineering the construction of the lines and of furnishing the materials required for the work. After negotiations with the Governments and groups concerned an agreement was reached whereby American, British, French, and German nationals should participate upon equal terms in this important and useful undertaking. Thereupon the financial groups, supported by their respective Governments, began negotiations with the Chinese Government which terminated in a loan to China of $30,000,000, with the privilege of increasing the amount to $50,000,000. The cooperative construction of these trunk lines should be of immense advantage, materially and otherwise, to China and should greatly facilitate the development of the bountiful resources of the Empire. On the other hand, a large portion of these funds is to be expended for materials, American products having equal preference with those of the other three lending nations, and as the contract provides for branches and extensions subsequently to be built on the same terms the opportunities for American materials will reach considerable proportions.

Knowing the interest of the United States in the reform of Chinese currency, the Chinese Government, in the autumn of 1910, sought the assistance of the American Government to procure funds with which to accomplish that all-important reform. In the course of the subsequent negotiations there was combined with the proposed currency loan one for certain industrial developments in Manchuria, the two loans aggregating the sum of $50,000,000. While this was originally to be solely an American enterprise, the American Government, consistently with its desire to secure a sympathetic and practical cooperation of the great powers toward maintaining the principle of equality of opportunity and the administrative integrity of China, urged the Chinese Government to admit to participation in the currency loan the associates of the American group in the Hukuang loan. While of immense importance in itself, the reform contemplated in making this loan is but preliminary to other and more comprehensive fiscal reforms which will be of incalculable benefit to China and foreign interests alike, since they will strengthen the Chinese Empire and promote the rapid development of international trade.

NEUTRAL FINANCIAL ADVISER.

When these negotiations were begun, it was understood that a financial adviser was to be employed by China in connection with the reform, and in order that absolute equality in all respects among the lending nations might be scrupulously observed, the American Government proposed the nomination of a neutral adviser, which was agreed to by China and the other Governments concerned. On September 28, 1911, Dr. Vissering, president of the Dutch Java Bank and a financier of wide experience in the Orient, was recommended to the Chinese Government for the post of monetary adviser.

Especially important at the present, when the ancient Chinese Empire is shaken by civil war incidental to its awakening to the many influences and activities of modernization, are the cooperative policy of good understanding which has been fostered by the international projects referred to above and the general sympathy of view among all the Powers interested in the Far East. While safeguarding the interests of our nationals, this Government is using its best efforts in continuance of its traditional policy of sympathy and friendship toward the Chinese Empire and its people, with the confident hope for their economic and administrative development, and with the constant disposition to contribute to their welfare in all proper ways consistent with an attitude of strict impartiality as between contending factions.

For the first time in the history of the two countries, a Chinese cruiser, the *Haichi,* under the command of Admiral Ching, recently visited New York, where the officers and men were given a cordial welcome.

NEW JAPANESE TREATY.

The treaty of commerce and navigation between the United States and Japan, signed in 1894, would by a strict interpretation of its provisions have terminated on July 17, 1912. Japan's general treaties with the other powers, however, terminated in 1911, and the Japanese Government expressed an earnest desire to conduct the negotiations for a new treaty with the United States simultaneously with its negotiations with the other powers. There were a number of important questions involved in the treaty, including the immigration of laborers, revision of the customs tariff, and the right of Americans to hold real estate in Japan. The United States consented to waive all technicalities and to enter at once upon negotiations for a new treaty on the understanding that there should be a continuance throughout the life of the treaty of the same effective measures for the restriction of immigration of laborers to American territory which had been in operation with entire satisfaction to both Governments since 1908. The Japanese Government accepted this basis of negotiation, and a new treaty was quickly concluded, resulting in a highly satisfactory settlement of the other questions referred to.

A satisfactory adjustment has also been effected of the questions growing out of the annexation of Korea by Japan.

The recent visit of Admiral Count Togo to the United States as the Nation's guest afforded a welcome opportunity to demonstrate the friendly feeling so happily existing between the two countries.

SIAM.

There has been a change of sovereigns in Siam and the American minister at Bangkok was accredited in a special capacity to represent the United States at the coronation ceremony of the new King.

EUROPE AND THE NEAR EAST.

In Europe and the Near East, during the past twelve-month, there has been at times considerable political unrest. The Moroccan question, which for some months was the cause of great anxiety, happily appears to have reached a stage at which it need no longer be regarded with concern. The Ottoman Empire was occupied for a period by strife in Albania and is now at war with Italy. In Greece and the Balkan countries the disquieting potentialities of this situation have been more or less felt. Persia has been the scene of a long internal struggle. These conditions have been the cause of uneasiness in European diplomacy, but thus far without direct political concern to the United States.

In the war which unhappily exists between Italy and Turkey this Government has no direct political interest, and I took occasion at the suitable time to issue a proclamation of neutrality in that conflict. At the same time all necessary steps have been taken to safeguard the personal interests of American citizens and organizations in so far as affected by the war.

COMMERCE WITH THE NEAR EAST.

In spite of the attendant economic uncertainties and detriments to commerce, the United States has gained markedly in its commercial standing with certain of the nations of the Near East. Turkey, especially, is beginning to come into closer relations with the United States through the new interest of American manufacturers and exporters in the possibilities of those regions, and it is hoped that foundations are being laid for a large and mutually beneficial exchange of commodities between the two countries. This new interest of Turkey in American goods is indicated by the fact that a party of prominent merchants from a large city in Turkey recently visited the United States to study conditions of manufacture and export here, and to get into personal touch with American merchants, with a view to cooperating more intelligently in opening up the markets of Turkey and the adjacent countries to our manufactures. Another indication of this new interest of America in the commerce of the Near East is the recent visit of a large party of American merchants and manufacturers to central and eastern Europe, where they were entertained by prominent officials and organizations of the large cities, and new bonds of friendship and understanding were established which can not but lead to closer and greater commercial interchange.

CORONATION OF KING GEORGE V.

The 22d of June of the present year marked the coronation of His Britannic Majesty King George V. In honor of this auspicious occasion I sent a special embassy to London. The courteous and cordial welcome extended to this Government's representatives by His Majesty and the people of Great Britain has further emphasized the strong bonds of friendship happily existing between the two nations.

SETTLEMENT OF LONG-STANDING DIFFERENCES WITH GREAT BRITAIN.

As the result of a determined effort on the part of both Great Britain and the United States to settle all of their outstanding differences a number of treaties have been entered into between the two countries in recent years, by which nearly all of the unsettled questions between them of any importance have either been adjusted by agreement or arrangements made for their settlement by arbitration. A number of the unsettled questions referred to consist of pecuniary claims presented by each country against the other, and in order that as many of these claims as possible should be settled by arbitration a special agreement for that purpose was entered into between the two Governments on the 18th day of August, 1910, in accordance with Article II of the general arbitration treaty with Great Britain of April 4, 1908. Pursuant to the provisions of this special agreement a schedule of claims has already been agreed upon, and the special agreement, together with this schedule, received the approval of the Senate when submitted to it for that purpose at the last session of Congress. Negotiations between the two Governments for the preparation of an additional schedule of claims are already well advanced, and it is my intention to submit such schedule as soon as it is agreed upon to the Senate for its approval, in order that the arbitration proceedings may be undertaken at an early date. In this connection the attention of Congress is particularly called to the necessity for an appropriation to cover the expense incurred in submitting these claims to arbitration.

PRESENTATION TO GERMANY OF REPLICA OF VON STEUBEN STATUE.

In pursuance of the act of Congress, approved June 23, 1910, the Secretary of State and the Joint Committee on the Library entered into a contract with the sculptor, Albert Jaegers, for the execution of a bronze replica of the statue of Gen. von Steuben erected in Washington, for presentation to His Majesty the German Emperor and the German nation in recognition of the gift of the statue of Frederick the Great made by the Emperor to the people of the United States.

The presentation was made on September 2 last by representatives whom I commissioned as the special mission of this Government for the purpose.

The German Emperor has conveyed to me by telegraph, on his own behalf and that of the German people, an expression of appreciative thanks for this action of Congress.

RUSSIA.

By direction of the State Department, our ambassador to Russia has recently been having a series of conferences with the minister of foreign affairs of Russia, with a view to securing a clearer understanding and construction of the treaty of 1832 between Russia and the United States and the modification of any existing Russian regulations which may be found to interfere in any way with the full recognition of the rights of American citizens under this treaty. I believe that the Government of Russia is addressing itself seriously to the need of changing the present practice under the treaty and that sufficient progress has been made to warrant the continuance of these conferences in the hope that there may soon be removed any justification of the complaints of treaty violation now prevalent in this country.

I expect that immediately after the Christmas recess I shall be able to make a further communication to Congress on this subject.

LIBERIA.

Negotiations for the amelioration of conditions found to exist in Liberia by the American commission, undertaken through the Department of State, have been concluded and it is only necessary for certain formalities to be arranged in securing the loan which it is hoped will place that republic on a practical financial and economic footing.

RECOGNITION OF PORTUGUESE REPUBLIC.

The National Constituent Assembly, regularly elected by the vote of the Portuguese people, having on June 19 last unanimously proclaimed a republican form of government, the official recognition of the Government of the United States was given to the new Republic in the afternoon of the same day.

SPITZBERGEN ISLANDS.

Negotiations for the betterment of conditions existing in the Spitzbergen Islands and the adjustment of conflicting claims of American citizens and Norwegian subjects to lands in that archipelago are still in progress.

INTERNATIONAL CONVENTIONS AND CONFERENCES.

INTERNATIONAL PRIZE COURT.

The supplementary protocol to The Hague convention for the establishment of an international prize court, mentioned in my last annual message, embodying stipulations providing for an alternative procedure which would remove the constitutional objection to that part of The Hague convention which provides that there may be an appeal to the proposed court from the decisions of national courts, has received the signature of the governments parties to the original convention and has been ratified by the Government of the United States, together with the prize court convention.

The deposit of the ratifications with the Government of the Netherlands awaits action by the powers on the declaration, signed at London on February 26, 1909, of the rules of international law to be recognized within the meaning of article 7 of The Hague convention for the establishment of an International Prize Court.

FUR-SEAL TREATY.

The fur-seal controversy, which for nearly twenty-five years has been the source of serious friction between the United States and the powers bordering upon the north Pacific Ocean, whose subjects have been permitted to engage in pelagic sealing against the fur-seal herds having their breeding grounds within the jurisdiction of the United States, has at last been satisfactorily adjusted by the conclusion of the north Pacific sealing convention entered into between the United States, Great Britain, Japan, and Russia on the 7th of July last. This convention is a conservation measure of very great importance, and if it is carried out in the spirit of reciprocal concession and advantage upon which it is based, there is every reason to believe that not only will it result in preserving the fur-seal herds of the north

Pacific Ocean and restoring them to their former value for the purposes of commerce, but also that it will afford a permanently satisfactory settlement of a question the only other solution of which seemed to be the total destruction of the fur seals. In another aspect, also, this convention is of importance in that it furnishes an illustration of the feasibility of securing a general international game law for the protection of other mammals of the sea, the preservation of which is of importance to all the nations of the world.

LEGISLATION NECESSARY.

The attention of Congress is especially called to the necessity for legislation on the part of the United States for the purpose of fulfilling the obligations assumed under this convention, to which the Senate gave its advice and consent on the 24th day of July last.

PROTECTION OF INDUSTRIAL PROPERTY UNION.

The conference of the International Union for the Protection of Industrial Property, which, under the authority of Congress, convened at Washington on May 16, 1911, closed its labors on June 2, 1911, by the signature of three acts, as follows:

(1) A convention revising the Paris convention of March 20, 1883, for the protection of industrial property, as modified by the additional act signed at Brussels on December 14, 1900;

(2) An arrangement to replace the arrangement signed at Madrid on April 14, 1891, for the international registration of trade-marks, and the additional act with regard thereto signed at Brussels on December 14, 1900; and

(3) An arrangement to replace the arrangement signed at Madrid on April 14, 1891, relating to the repression of false indication of production of merchandise.

The United States is a signatory of the first convention only, and this will be promptly submitted to the Senate.

INTERNATIONAL OPIUM COMMISSION.

In a special message transmitted to the Congress on the 7th of January, 1911, in which I concurred in the recommendations made by the Secretary of State in regard to certain needful legislation for the control of our interstate and foreign traffic in opium and other menacing drugs, I quoted from my annual message of December 7, 1909, in which I announced that the results of the International Opium Commission held at Shanghai in February, 1909, at the invitation of the United States, had been laid before this Government; that the report of that commission showed that China was making remarkable progress and admirable efforts toward the eradication of the opium evil; that the interested Governments had not permitted their commercial interests to prevent their cooperation in this reform; and, as a result of collateral investigations of the opium question in this country, I recommended that the manufacture, sale, and use of opium in the United States should be more rigorously controlled by legislation.

Prior to that time and in continuation of the policy of this Government to secure the cooperation of the interested nations, the United States proposed an international opium conference with full powers for the purpose of clothing with the force of international law the resolutions adopted by the above-mentioned commission, together with their essential corollaries. The other powers concerned cordially responded to the proposal of this Government, and, I am glad to be able to announce, representatives of all the powers assembled in conference at The Hague on the first of this month.

Since the passage of the opium-exclusion act, more than twenty States have been animated to modify their pharmacy laws and bring them in accord with the spirit of that act, thus stamping out, to a measure, the intrastate traffic in opium and other habit-forming drugs. But, although I have urged on the Congress the passage of certain measures for Federal control of the interstate and foreign traffic in these drugs, no action has yet been taken. In view of the fact that there is now sitting at The Hague so important a conference, which has under review the municipal laws of the different nations for the mitigation of their opium and other allied evils, a conference which will certainly deal with the international aspects of these evils, it seems to me most essential that the Congress should take immediate action on the anti-narcotic legislation to which I have already called attention by a special message.

BUENOS AIRES CONVENTIONS.

The four important conventions signed at the Fourth Pan American Conference at Buenos Aires, providing for the regulation of trade-marks, patents, and copyrights, and for the arbitration of pecuniary claims, have, with the advice and consent of the Senate, been ratified on the part of the United States and the ratifications have been deposited with the Government of the Argentine Republic in accordance with the requirements of the conventions. I am not advised that similar action has been taken by any other of the signatory governments.

INTERNATIONAL ARRANGEMENT TO SUPPRESS OBSCENE PUBLICATIONS.

One of the notable advances in international morality accomplished in recent years was an arrangement entered into on April 13 of the present year between the United States and other powers for the repression of the circulation of obscene publications.

FOREIGN TRADE RELATIONS OF THE UNITED STATES.

In my last annual message I referred to the tariff negotiations of the Department of State with foreign countries in connection with the application, by a series of proclamations, of the minimum tariff of the United States to importations from the several countries, and I stated that, in its general operation, section 2 of the new tariff law had proved a guaranty of continued commercial peace, although there were, unfortunately, instances where foreign governments dealt arbitrarily with American interests within their jurisdiction in a manner injurious and inequitable. During the past year some instances of discriminatory treatment have been removed, but I regret to say that there remain a few cases of differential treatment adverse to the commerce of the United States. While none of these instances now appears to amount to undue discrimination in the sense of section 2 of the tariff law of August 5, 1909, they are all exceptions to that complete degree of equality of tariff treatment that the Department of State has consistently sought to obtain for American commerce abroad.

While the double tariff feature of the tariff law of 1909 has been amply justified by the results achieved in removing former and preventing new, undue discriminations against American commerce, it is believed that the time has come for the amendment of this feature of the law in such way as to provide a graduated means of meeting varying degrees of discriminatory treatment of American commerce in foreign countries as well as to protect the financial interests abroad of American citizens against arbitrary and injurious treatment on the part of foreign Governments through either legislative or administrative measures.

It would also seem desirable that the maximum tariff of the United States should embrace within its purview the free list, which is not the case at the present time, in order that it might have reasonable significance to the governments of those countries from which the importations into the United States are confined virtually to articles on the free list.

RECORD OF HIGHEST AMOUNT OF FOREIGN TRADE.

The fiscal year ended June 30, 1911, shows great progress in the development of American trade. It was noteworthy as marking the highest record of exports of American products to foreign countries, the valuation being in excess of $2,000,000,000. These exports showed a gain over the preceding year of more than $300,000,000.

FACILITIES FOR FOREIGN TRADE FURNISHED BY JOINT ACTION OF DEPARTMENT OF STATE AND OF COMMERCE AND LABOR.

There is widespread appreciation expressed by the business interests of the country as regards the practical value of the facilities now offered by the Department of State and the Department of Commerce and Labor for the furtherance of American commerce. Conferences with their officers at Washington who have an expert knowledge of trade conditions in foreign countries and with consular officers and commercial agents of the Department of Commerce and Labor who, while on leave of absence, visit the principal industrial centers of the United States, have been found of great value. These trade conferences are regarded as a particularly promising method of governmental aid in foreign trade promotion. The Department of Commerce and Labor has arranged to give publicity to the expected arrival and the itinerary of consular officers and commercial agents while on leave in the United States, in order that trade organizations may arrange for conferences with them.

As I have indicated, it is increasingly clear that to obtain and maintain that equity and substantial equality of treatment essential to the flourishing foreign trade, which becomes year by year more important to the industrial and commercial welfare of the United States, we should have a flexibility of tariff sufficient for the give and take of negotiation by the Department of State on behalf of our commerce and industry.

CRYING NEED FOR AMERICAN MERCHANT MARINE.

I need hardly reiterate the conviction that there should speedily be built up an American merchant marine. This is necessary to assure favorable transportation facilities to our great ocean-borne commerce as well as to supplement the Navy with an adequate reserve of ships and men. It would have the economic advantage of keeping at home part of the vast sums now paid foreign shipping for carrying American goods. All the great commercial nations pay heavy subsidies to their merchant marine, so that it is obvious that without some wise aid from the Congress the United States must lag behind in the matter of merchant marine in its present anomalous position.

EXTENSION OF AMERICAN BANKING TO FOREIGN COUNTRIES.

Legislation to facilitate the extension of American banks to foreign countries is another matter in which our foreign trade needs assistance.

CHAMBERS OF FOREIGN COMMERCE SUGGESTED.

The interests of our foreign commerce are nonpartisan, and as a factor in prosperity are as broad as the land. In the dissemination of useful information and in the coordination of effort certain unofficial associations have done good work toward the promotion of foreign commerce. It is cause for regret, however, that the great number of such associations and the comparative lack of cooperation between them fails to secure an efficiency commensurate with the public interest. Through the agency of the Department of Commerce and Labor, and in some cases directly, the Department of State transmits to reputable business interests information of commercial opportunities, supplementing the regular published consular reports. Some central organization in touch with associations and chambers of commerce throughout the country and able to keep purely American interests in closer touch with different phases of commercial affairs would, I believe, be of great value. Such organization might be managed by a committee composed of a small number of those now actively carrying on the work of some of the larger associations, and there might be added to the committee, as members ex officio, one or two officials of the Department of State and one or two officials from the Department of Commerce and Labor and representatives of the appropriate committees of Congress. The authority and success of such an organization would evidently be enhanced if the Congress should see fit to prescribe its scope and organization through legislation which would give to it some such official standing as that, for example, of the National Red Cross.

With these factors and the continuance of the foreign-service establishment (departmental, diplomatic, and consular) upon the high plane where it has been placed by the recent reorganization this Government would be abreast of the times in fostering the interests of its foreign trade, and the rest must be left to the energy and enterprise of our business men.

IMPROVEMENT OF THE FOREIGN SERVICE.

The entire foreign-service organization is being improved and developed with especial regard to the requirements of the commercial interests of the country. The rapid growth of our foreign trade makes it of the utmost importance that governmental agencies through which that trade is to be aided and protected should possess a high degree of efficiency. Not only should the foreign representatives be maintained upon a generous scale in so far as salaries and establishments are concerned, but the selection and advancement of officers should be definitely and permanently regulated by law so that the service shall not fail to attract men of high character and ability. The experience of the past few years with a partial application of civil-service rules to the Diplomatic and Consular Service leaves no doubt in my mind of the wisdom of a wider and more permanent extension of those principles to both branches of the foreign service. The men selected for appointment by means of the existing executive regulations have been of a far higher average of intelligence and ability than the men appointed before the regulations were promulgated. Moreover, the feeling that under the existing rules there is reasonable hope for permanence of tenure during good behavior and for promotion for meritorious service has served to bring about a zealous activity in the interests of the country, which never before existed or could exist. It is my earnest conviction that the enactment into law of the general principles of the existing regulations can not fail to effect further improvement in both branches of the foreign service by providing greater inducement for young men of character and ability to seek a career abroad in the service of the Government, and an incentive to those already in the service to put forth greater efforts to attain the high standards which the successful conduct of our international relations and commerce requires.

I therefore again commend to the favorable action of the Congress the enactment of a law applying to the diplomatic and consular service the principles embodied in section 1753 of the Revised Statutes of the United States, in the civil-service act of January 16, 1883, and the Executive orders of June 27, 1906, and of November 26, 1909. In its consideration of this important subject I desire to recall to the attention of the Congress the very favorable report made on the Lowden bill for the improvement of the foreign service by the Foreign Affairs Committee of the House of Representatives. Available statistics show the strictness with which the merit system has been applied to the foreign service during recent years and the absolute nonpartisan selection of consuls and diplomatic-service secretaries who indeed far from being selected with any view to political consideration have actually been chosen to a disproportionate extent from States which would have been unrepresented in the foreign service under the system which it is to be hoped is now permanently obsolete. Some legislation for the perpetuation of the present system of examinations and promotions upon merit and efficiency would be of greatest value to our commercial and international interests.

WM. H. TAFT.

THE WHITE HOUSE, *December 7, 1911.*

PROTECTION OF NATIONAL MILITARY PARKS.

LETTER

FROM

THE SECRETARY OF WAR,

RECOMMENDING

THE ENACTMENT OF A LAW TO PROVIDE FOR THE PROTECTION OF NATIONAL MILITARY PARKS, AND TRANSMITTING DRAFT OF PROPOSED LAW.

December 8, 1911.—Referred to the Committee on Military Affairs and ordered to be printed.

War Department,
Washington, December 6, 1911.

Sir: On March 5, 1910, this department represented to you the necessity for the enactment of a law providing for the better protection of the national military parks, it having been found in the course of their development that existing laws were not sufficient to that end. Accordingly there was submitted for the consideration of Congress the draft of a bill affording greater safeguards from injury or spoliation to park property. This correspondence was published in House Document No. 754, Sixty-first Congress, second session, but the request of the department did not receive favorable consideration.

The matter is therefore again called to the attention of Congress in the hope that the proposed legislation may be enacted, as the public interests demand this measure of protection. A draft of the proposed bill is inclosed.

Very respectfully,

H. L. Stimson,
Secretary of War.

The Speaker of the House of Representatives.

[House Document No. 754, Sixty-first Congress, second session.]

War Department,
Washington, March 5, 1910.

Sir: The several acts of Congress establishing national military parks contain penal provisions calculated to protect such parks, and the monuments, markers, etc., which have been established by the governments of the several States, from injury or spoliation. An act which received Executive approval on March 3, 1897 (29 Stats., 621), contains provisions of a similar character, which, by the terms of that enactment, were made applicable to all national military parks. This legislation was tentative in character, but answered its purpose for the time being. It has been found, however, that as the number of visitors has increased and the use of automobiles and other similar vehicles has become general, the requirements of existing legislation have been found inadequate to secure the roads, trees, monuments, and markers from injury or destruction.

For the reasons above stated the act of March 3, 1897, has been recast, in view of the experience gained by the commissioners to whose control the military parks are intrusted by law. In the preparation of the inclosed draft of legislation reports were obtained from the several park commissioners describing the injurious acts which are most frequently committed by visitors and others, and which should, in the opinion of the commissioners, be made the subject of a resort to some form of remedial legislation with a view to the protection of the property under their control. These are embodied in the memorandum herewith submitted for your consideration.

Considerable difficulty has been encountered in finding a suitable police tribunal before which ordinary cases, in the nature of misdemeanors, could be brought to trial, and the seventh section of the inclosed memorandum confers upon United States commissioners the powers of justices of the peace in the States and counties in which the several parks are situated. Such a vesting of jurisdiction is not without precedent, having been conferred upon United States commissioners in the Indian Territory in section 4 of the act of March 1, 1895 (28 Stats., 695), and in the Territory of Alaska in section 6 of the act of June 6, 1900 (31 Stats., 323).

In conclusion, I have the honor to commend the inclosed draft of legislation to the favorable consideration of Congress.

Very respectfully,

ROBERT SHAW OLIVER,
Acting Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

A BILL To provide for the protection of national military parks.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That every person who, within the limits of any national military park, willfully destroys, mutilates, defaces, injures, or removes any monument, statue, marker, guidepost, fence, or other structure, or who willfully destroys, cuts, breaks, injures, or removes any tree, shrub, trellis, arbor, or plant, shall be guilty of a misdemeanor and punishable as hereinafter provided.

SEC. 2. That every person who shall trespass upon any such park for the purpose of hunting or shooting, or who shall hunt any kind of game thereon, with gun or dog, or shall set trap or net or other device whatsoever, thereon for the purpose of hunting or catching game of any kind, shall be guilty of a misdemeanor and punishable as hereinafter provided.

SEC. 3. That any person who shall not confine his course in traveling over the streets and avenues of such park, by vehicle or on horseback, to the roads constructed for such purpose, and to the right-hand side of such roads, and in passing a vehicle going in the same direction turn to the left, or shall willfully and knowingly use for riding or driving over such streets and avenues animals not broken or under control, or ride or drive by horse or other vehicle propelled by steam or otherwise, over said streets or avenues at a speed exceeding the rate of eight miles an hour, or at the rate of six miles an hour when approaching or rounding curves, shall be guilty of a misdemeanor and punishable as hereinafter provided: *Provided,* That these provisions shall not apply to streets or roads laid out or established by local law.

SEC. 4. That any person or persons who shall camp or abide in any such park, or shall expose any article for sale, or purchase or sell any intoxicating liquor, or take photographs or other views or pictures of any objects therein without a permit from the Secretary of War, the commissioners, or superintendent of such park, or throw stones or other missiles, or interfere with birds or their nests, or display any sign, placard, or other form of advertisement, or solicit alms, subscriptions, or contributions, or discharge firearms, fireworks, or other explosives, without the consent as aforesaid, or set fire to any combustibles, or carry any firearms such as is used for hunting, or who shall be guilty of boisterous or disorderly conduct, or who shall use any threatening or abusive language, or do any obscene or indecent act, or commit any nuisance, or pollute or otherwise injuriously interfere with any stream, spring, or fountain, or play ball or other games of sport or games of chance, shall be guilty of a misdemeanor and punishable as hereinafter provided.

SEC. 5. That any person owning or having control of any neat cattle, horses, mules, sheep, swine, or other live stock who permits the same to run at large within such park shall be guilty of a misdemeanor and punishable as hereinafter provided.

SEC. 6. That any person, upon conviction of the misdemeanor hereinbefore provided, shall be punished by a fine not exceeding five hundred dollars or by imprisonment not exceeding one year, or by both such fine and imprisonment, in the discretion of the court.

SEC. 7. That the park commissioners, superintendent, officers, or guardians of such park, or any of them, are authorized to arrest forthwith any person engaged, or who may have been engaged in committing any misdemeanor named in this act, and shall bring such person before any judge of any district or circuit court of the United States of the district in which such park is situated, or before any United States commissioner thereof, who, for the purposes of this act shall have and exercise the civil and criminal jurisdiction which is conferred upon justices of the peace by this act, the common law, and by the statute of the State in which such national military park is situated and such misdemeanor has been committed

SEC. 8. All acts and parts of acts inconsistent herewith are hereby repealed.

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 251.

ONEIDA INDIANS.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

TRANSMITTING

REPORT OF NEGOTIATIONS WITH ONEIDA INDIANS FOR COMMUTATION OF THEIR PERPETUAL ANNUITIES, AS PROVIDED FOR BY ACT OF MARCH 3, 1911.

December 8, 1911.—Referred to the Committee on Indian Affairs and ordered to be printed.

Department of the Interior,
Washington, December 6, 1911.

The Speaker of the House of Representatives.

Sir: The Indian appropriation act approved March 3, 1911 (36 Stat. L., 1058–1077), contains the following provision:

> The Commissioner of Indian Affairs is hereby directed to reopen negotiations with the Oneida Indians of Wisconsin for the commutation of their perpetual annuities under treaty stipulations and report the same to Congress on the first Monday in December, nineteen hundred and eleven.

Pursuant to this provision of law, United States Inspector James McLaughlin was designated and instructed, by letter of August 15, 1911, to proceed to the Oneida School, Wisconsin, and open negotiations with the Oneida Indians for the commutation of their perpetual annuities under treaty stipulations.

The inspector's report, dated August 30, 1911, shows that after full consideration of the matter by the Indians in council assembled they rejected, by an almost unanimous vote, the proposal of the Government to commute their perpetual annuity on the basis of a 5 per cent capitalization thereof.

With the inspector's report he transmitted the minutes of the council meetings held with the Indians, setting forth in full their reasons for the rejection of the proposal of the Government.

Copies of the instructions to the inspector, of his report, and certain telegraphic correspondence pertaining to the negotiations with the Indians are inclosed herewith for the information of the Congress, in accordance with the provision in the Indian appropriation act above quoted.

Respectfully,

WALTER L. FISHER,
Secretary.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., August 15, 1911.

Mr. JAMES MCLAUGHLIN,
United States Inspector, Washington, D. C.

SIR: The Indian appropriation act approved April 30, 1908 (35 Stat. L., 70–73), provides:

> That the Commissioner of Indian Affairs is hereby authorized to send a special Indian agent or other representative of his office to visit any Indian tribe for the purpose of negotiating and entering into a written agreement with such tribe for the commutation of the perpetual annuities due under treaty stipulations, to be subject to the approval of Congress; and the Commissioner of Indian Affairs shall transmit to Congress said agreements with such recommendations as he may deem proper.

In accordance with this provision of law instructions were given by the Commissioner of Indian Affairs to Special Agent W. R. Logan to negotiate an agreement with the Oneida Indians of Wisconsin, constituting a part of the original Six Nations of New York, for the commutation of their perpetual annuity under the treaty of November 11, 1794 (7 Stat., 44–46). An agreement was concluded with these Indians on January 4, 1909, by Special Agent Logan, by which the Indians agreed to accept in lieu of their said perpetual annuity a cash payment in full of all obligations on the part of the United States so far as said annuity is concerned, based upon their proportion of the annuity paid to the Six Nations.

The agreement for the commutation of this perpetual annuity was on the basis of 5 per cent, and it was understood that the funds when capitalized should be placed in the Treasury of the United States to the credit of the tribe, and bear interest at the rate of 5 per cent until such time as it might be deemed proper to pay out the same to the Indians or to expend it for their benefit. This and several other similar agreements were transmitted to Congress, through the President, under date of February 8, 1910, but no appropriation was made by Congress to carry out the terms of the agreement.

By a provision in the Indian appropriation act approved March 3, 1911 (36 Stat., 1058–1077), the Commissioner of Indian Affairs was directed—

> * * * to reopen negotiations with the Oneida Indians of Wisconsin for the commutation of their perpetual annuities under treaty stipulations and report the same to Congress on the first Monday in December, nineteen hundred and eleven.

In view of this provision of law, you are directed, as soon as your other assignments will permit, to proceed to the Oneida School at Oneida, Wis., and take up with the Oneida Indians the question of entering into a new agreement for the commutation of their perpetual annuity referred to above.

The annuity payment to the Six Nations of New York, under the treaty mentioned, amounts to $4,500 per annum, of which the Wisconsin branch of the Oneida Tribe receives $1,000 as its proportion. A capitalization of this perpetual annuity on the basis of 5 per cent is believed to be fair and just to the Indians, and is the same basis on which agreements have been made with several other tribes and ratified by Congress.

You are authorized to inform the Indians that they may agree to settle with the Government either by receiving the whole sum in cash to be distributed pro rata among the members of the tribe entitled thereto, or by permitting it to be expended by the Secretary of the Interior for their benefit.

You should be careful to explain to the Indians that any agreement they may make will be subject to the approval of Congress and will be of no effect whatever until ratified by that body.

The agreement should be signed by a majority of the adult members of the tribe without regard to sex, and where the Indians can not write their own names they should be required to affix the imprint of their right thumbs opposite their written signatures. The agreement should also be signed by yourself in your official capacity and should bear the certificate of the official interpreter to the effect that it was explained to the Indians in open council, and that its contents and purport were fully understood by them before signing; also the certificate of at least two disinterested persons that they were present and witnessed the signing of the instrument. Further, there should be a certificate by the superintendent showing the total number of adult Indians belonging to the tribe, and that the persons signing the agreement constituted a majority of said adult members.

The agreement should be executed in triplicate, and when completed should be forwarded promptly to the department for its consideration, with such recommendations as you may wish to submit in connection therewith. In this connection there is transmitted herewith for your information a copy of Senate Document No. 358, Sixty-first Congress, second session, containing the correspondence relative to the commutation agreements heretofore entered into with various Indian tribes and submitted to Congress for its action.

Respectfully,

SAMUEL ADAMS,
Acting Secretary.

DEPARTMENT OF THE INTERIOR,
UNITED STATES INDIAN SERVICE,
Oneida, Wis., August 30, 1911.

The honorable the SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: I have the honor to submit the following report of my negotiations with the Oneida Indians of Wisconsin with reference to the commutation of their perpetual annuity under article 6 of the treaty of November 11, 1794 (7 Stat. L., p. 46), which negotiations were conducted by me under department instructions of August 15, 1911.

I arrived at the Oneida Agency, Oneida, Wis., on the morning of the 23d instant, and having previously notified Supt. Hart, of the Oneida Indian School, of my contemplated visit to the Oneida Agency and object of my visit thereto, together with the probable date of my arrival, and in which communication I requested that he, the superintendent, advise the interested Indians of the object of my visit to their reservation and notify them to meet me in council at the agency on Friday, the 25th instant, therefore the Indians, when we met in council, were prepared for a thorough discussion of the proposition from their point of view.

Our council was convened on Friday the 25th instant, with 125 of the leading male adult Indians of the reservation in attendance, and, as may be seen by the council minutes herewith, I presented to them very clearly the proposition of commuting their apportionment of the said annuity on the basis of 5 per cent, as instructed, thus providing a sum of $20,000 for distribution among them as their pro rata share of the commuted annuity. After discussing the proposition with them for three hours, the council was, at the request of the Indians, adjourned till Monday morning the 28th instant, that the Indians might in the meantime discuss and consider the question among themselves, unhampered by a formal council with a Government official.

Upon the council reassembling on the 28th instant there were 160 male adult Indians in attendance, all of whom were leading men of the reservation, and, as stated by Supt. Hart, represented nearly every family belonging on the Oneida Reservation. At this council I submitted to the assembled Indians a tentative agreement which I had prepared, the discussion of which appears on pages 28, 29, 34, and 35 of the council minutes, which tentative agreement I transmit herewith.

Upon resuming negotiations, I soon perceived that a majority consent of the Indians could not be obtained at this time to the commutation of this annuity on the basis proposed, and after a long discussion of the matter and a vote taken thereon, only nine Indians of those present voted to concur in the proposition, all others of the 160 male adults assembled voting to reject it, thus evidencing the sentiment now prevailing among these Oneidas with reference to the matter as practically unanimous in opposition to the capitalization of the said annuity on the proposed basis. See page 41 of council minutes herewith.

After the Indians had, by almost a unanimous vote, rejected the proposition and, being convinced that it would be futile to attempt to press the matter further at the present time, I suggested that some one of them should state briefly their reasons for nonconcurrence, whereupon Dennison Wheelock, a member of the tribe and attorney at law, who is practicing law at the town of De Pere. adjoining their reservation, was elected by the Indians to state their objections to the proposition, which he (Mr. Wheelock) presented very clearly, as recorded on pages 42 and 43 of the council minutes herewith.

In this connection, I desire to submit that the enrollment of the Six Nations of New York in 1910, as stated in department telegram of 29th instant to me, being 7,777, of whom 5,476 are in the State of New York and 2,301 in Wisconsin, an equitable distribution of the annuity of $4,500 on the basis of the population at that time would give the Wisconsin Oneidas an annuity of $1,331.42, and it would therefore appear that the Wisconsin Oneidas, on the 5 per cent basis, would be entitled to the sum of $26,628.40 as their share of the said annuity, if commuted, instead of $20,000 as proposed.

In conclusion I would respectfully request that the council minutes transmitted herewith be considered in connection with this report, with attention particularly invited to pages 42 and 43 thereof. upon which is recorded the statement of Dennison Wheelock, a member of the tribe, who, at the request of the assembled Indians, stated the reasons influencing the Oneidas of Wisconsin in their emphatic refusal to accept the commutation of the said perpetual annuity on the basis proposed.

The calm and courteous manner in which Mr. Wheelock expressed himself regarding the matter, with the objections presented by him so emphatically indorsed by the council, showed very plainly that their nonconcurrence in the proposition had been determined upon in tribal council and that Mr. Wheelock had carefully prepared the wording of his oral presentation of the attitude of the Indians in the premises.

Very respectfully, your obedient servant,

JAMES McLAUGHLIN, *Inspector.*

AGREEMENT FOR COMMUTATION OF PERPETUAL ANNUITIES.

Whereas it is provided by the Indian appropriation act approved March 3, 1911, that "the Commissioner of Indian Affairs is hereby directed to reopen negotiations with the Oneida Indians of Wisconsin for the commutation of their perpetual annuities under treaty stipulations and report the same to Congress on the first Monday in December, 1911."

And whereas the Secretary of the Interior, by letter of instructions dated August 15, 1911, has designated James McLaughlin, inspector, Department of the Interior, to negotiate an agreement with the Oneida Indians of Wisconsin for the commutation of their perpetual annuities under treaty stipulations.

And whereas the said James McLaughlin, inspector, Department of the Interior, in a council held at Parish Hall, on the Oneida Reservation, State of Wisconsin, on the 25th day of August, 1911, submitted to the said Oneida Indians of Wisconsin a proposition for the commutation of their apportionment of the perpetual annuity provided for the Six Nations of Indians under the treaty of November 11, 1794.

Now, therefore, we, the Oneida Indians of Wisconsin, a part of the original Six Nations of New York, do hereby agree, providing Congress approves the same and makes the necessary appropriation therefor, to accept in lieu of our perpetual annuities, under the treaty of November 11, 1794, article 6 (7 Stat. L., p. 46), a cash payment of $20,000 in commutation of our said perpetual annuity based upon our proportion of the annuity now paid to the Six Nations under the said treaty, namely, 5 per cent on $90,000, we the Oneidas of Wisconsin receiving at present $1,000 annually as our pro rata of the $4,500 interest money paid to the Six Nations of New York by the Government of the United States, the whole sum of $20,000 to be paid in cash to the Oneida Indians of Wisconsin and distributed pro rata among the members entitled thereto.

It is distinctly understood that nothing in this agreement shall be construed to deprive the Oneida Indians of Wisconsin, parties hereto, of any benefits to which they may be entitled under existing treaties or agreements not inconsistent with the provisions of this agreement.

In witness whereof we, the undersigned, have hereunto set our hands and seals, at Oneida, Wis., this 28th day of August, 1911.

——— ———,

Inspector, Department of the Interior.

Names.	Age.	Sex.	Thumb mark.
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PROCEEDINGS OF COUNCIL HELD BY JAMES McLAUGHLIN, INSPECTOR, WITH ONEIDA INDIANS, AT ONEIDA, WIS., AUGUST 25, 1911, WITH REFERENCE TO THE COMMUTATION OF THEIR PERPETUAL ANNUITY UNDER TREATY OF NOVEMBER 11, 1794.

Council convened at 2 p. m., with Superintendent Hart and 125 adult Indians in attendance, Lyman Powless, interpreter.

Superintendent HART. I have asked you to come together this afternoon to consider a question that has been before you on several occasions since I have been here and a question which you discussed and voted upon two years ago when Maj. Logan was here. The question, as most of you know, is what is to be done about the payment in one sum of the annuity that has been paid you for the last hundred years. This question will be presented to you to-day by a man who has been in the Indian Service for the last 40 years, by a man who has been called the friend of the Indian people during all that time and who is one of the most trusted officers of the department. He is a man who, I think, in the last 15 years, has had the making of practically all the treaties and agreements with the Indian people. He is a man who comes here with the confidence of the department and comes with the confidence of all the people with whom he has ever dealt. I have the honor to present to you Maj. McLaughlin, of the Indian Department.

Inspector MCLAUGHLIN. My friends, I am pleased to meet such a representative gathering of the Oneidas here to-day, and, although I have met very few of your people heretofore, I know the history of the Oneidas very well. I have recently spent several weeks with your kinsmen and other tribes of the Six Nations in New York, and I am pleased to meet the Oneidas of Wisconsin here to-day.

I am here by direction of the Secretary of the Interior to submit to you the question of the commutation of the share apportioned to you of the perpetual annuity provided for the Six Nations of Indians under the treaty of November 11, 1794. The said perpetual annuity is $4,500, of which $3,500 annually is expended in the purchase of goods for distribution among the Indians of the Six Nations residing in the State of New York, and $1,000 of the said fund has been apportioned to you Oneidas of Wisconsin as your share thereof, and has been paid to you annually in cash for a number of years past, and it is believed desirable and best for you that this annuity of $1,000 be commuted and paid to you in a lump sum that will be of greater benefit to each and all of you than doled out annually as in the past. Your last payment of that fund being but 42 cents per capita, scarcely compensates the beneficiaries for coming after their respective shares.

An agreement was entered into by you Oneidas of Wisconsin on January 4, 1909, with Special Indian Agent W. R. Logan, who, under instructions of the Commissioner of Indian Affairs, visited you for that purpose, the agreement concluded by him with you being on the basis of 5 per cent. Your said agreement, together with several others of similar character concluded with the Sac and Fox of the Mississippi Tribe of Oklahoma and Iowa, the Pottawatomie of Kansas and Wisconsin, and the Pawnee Tribe of Oklahoma, were duly transmitted to Congress by the department, but for some reason no appropriation was made by Congress to carry out the terms of the agreement entered into by you with Maj. Logan. The House of Representatives of Congress made provision for the payment as provided in your agreement, but it failed to pass the Senate, although it was twice before that body.

An item in the Indian appropriation act approved March 3, 1911, directs the Commissioner of Indian Affairs to reopen negotiations with the Oneida Indians of Wisconsin for the commutation of their perpetual annuities under treaty stipulations and report the same to Congress on the first Monday in December, 1911, which is only three months hence, and I am here to present the matter to you and confer with you relative to same.

A capitalization of this perpetual annuity on the basis of 5 per cent—that is, $20 for $1—as entered into by Maj. Logan with you, is the basis upon which all similar perpetual annuities have been commuted, which capitalization is believed to be fair and just to you people and is the same basis on which the agreements with other Indian tribes have been concluded, which have been ratified by Congress, and the commutation of your $1,000 annuity upon any other basis can not be entertained by me.

The perpetual annuity referred to, as you all know, is $4,500, of which sum $3,500 annually is distributed in goods to the Six Nations of New York and $1,000 is apportioned to you as your annual share of said annuity.

The commutation of the total annuity of $4,500 on the basis of 5 per cent, $20 for $1, would give a capitalized fund of $90,000; the $3,500 annual share apportioned to the New York Indians would give them a capitalized fund of $70,000 for per capita distribution among them, and your apportionment of $1,000 annually, capitalized on the same basis, would give $20,000 for per capita distribution among you Wisconsin Oneidas, which, from the number of beneficiaries now on your rolls, would approximate $8.50 per capita; that is, about $8.50 to each man, woman, and child borne on the rolls of the reservation.

Such a per capita payment to you in a lump sum in cash would be of great benefit to all members of this reservation and much preferable to having it doled out to you as in the past in such small amounts as to not justify the expense you incur in coming after it to the agency, which was only 42 cents per capita the last payment and which per capita amounts will annually decrease in proportion as your people increase in numbers, and the agency records show that the Oneidas of Wisconsin are steadily increasing.

It is believed by the officials of the department, also by all friends of the Indians, that it is best for Indians that their perpetual annuities be capitalized and paid out to them in a lump sum so that they may receive the greater benefit from same, also thus be relieved of the worry of looking forward to receiving an insignificant sum annually which is practically of no benefit to them, and I, as your friend, hope for your concurrence in the proposition submitted which I have endeavored to present to you very clearly. I desire to add that any agreement which we may conclude in this matter will be subject to the approval of Congress and will be of no effect whatever until ratified by that body.

Having been asked since my arrival here if your concurrence in the commutation of this annuity will affect any claim you might have against the Government or against the State of New York, I wish you to fully understand, and to place myself on record as having made the statement to you here, that the commutation of this annuity has no bearing whatever on any claim which you may have, either against the Government, any State, or individual, but has reference merely to the $4,500 annuity paid to the Six Nations under the treaty of November 11, 1794, and in any agreement which we may conclude I will insert a provision to the effect that it will not in any way affect any claim which you may have growing out of former treaties or agreements not inconsistent with the provisions of the agreement which we may enter into. This is my letter of instructions [holding up a letter] from the Secretary of the Interior in regard to this matter. It is very lengthy, but I shall be glad to have it passed around among you people so that those of you who read English may fully understand it and explain it to the others present.

I shall now listen to what you may have to say regarding the question which I have presented to you.

Superintendent HART. I take it that the question is now up to you without a formal motion. The question is, What are you willing to accept? Are you willing to accept a lump payment of $20,000 without the sum paid you now each year? I think the question is now before you for discussion. We want to know what you want to do about it. We are ready to hear now, as clearly and concisely as may be, your opinions on this question. The question is open.

JOHN ARCHIQUETTE. I would like to present my views. In the first place, the question is now before us, How and what are we going to do? Shall we accept the $20,000, and, if we don't, how are we going to settle for the future? And I wish to understand—and it is something that I can't understand myself, really—how this question is going to come up and what the question is going to be afterwards.

DENNISON WHEELOCK. Mr. Inspector, I wish—and perhaps it would be a good idea for me to review the proposition in brief so that all the things may be distinctly understood just as to what the proposition is intended to be presented here. We all understand that we receive annually a payment of 42 cents per capita; which has been paid since 1794, I think is the date, to the Six Nation Indians, of which we are a part. Thirty-five thousand dollars has been paid to the others and $1,000 has been annually paid to us. Now, the idea of the inspector is to merely submit to us the proposition of taking $20,000 in cash instead of this $1,000 that is being paid to us annually. Should we take $20,000 in cash and the annuity will then be discontinued, no further payments will be made by the Government; and the only question is whether the Oneida Tribe is willing to accept this $20,000 in full settlement of that annuity or not. Now, if we say "No, we are not satisfied, that is not enough," the inspector is not authorized to enter into an agreement for more. Supposing we want $30,000, he is not authorized to consider that. Simplified, his proposition is simply this: Will we take $20,000 in full settlement of the perpetual annuity of the treaty of 1794 or do we refuse it? I think that makes it clear.

Inspector **McLaughlin**. That you people may understand fully what this $20,000 is based upon, 5 per cent interest on $20,000 is $1,000 per year; which, if capitalized on a 5 per cent basis, makes the amount, $20,000; therefore, $20,000 is the amount offered to you, and this is on the same basis as that entered into with the other tribes. A $20,000 capitalized fund would be the same as $20,000 in the Treasury of the United States drawing 5 per cent interest, which gives you $1,000 a year.

Dennison Wheelock. I want to present my views, and will have Mr. Powless interpret this so the people will understand just what I say. The objections which a great many of the tribe have against accepting the $20,000 are, in the first place, perpetual annuities are very seldom commuted on the basis such as has been presented to us; that is, the Indian department has concluded that our $4,500 annuity is equivalent to $90,000 in the United States Treasury bearing interest at the rate of 5 per cent, which amount ($90,000) it proposes to turn over to the Six Nations, $20,000 of which to this branch of the Six Nations, which fund does not exist as a matter of fact. Now, you take in life insurance companies, when desiring to purchase the annuity of any person, the basis of computation is always upon the expectancy of the life of that person. The valuation reached in any annuity purchase is always on the basis of the expectancy of the life of the person who owns the annuity. Now, in the case under consideration, the expectancy of the tribal life is not taken into consideration whatever, but a certain amount of money is supposedly made to exist in a certain way as if it was producing a certain amount of interest, whereas this annuity is really a direct obligation on the part of the Government to pay a certain amount every year. It is not interest.

Now, the Government undertakes to confuse the value of an annuity with the interest that may accrue by a deposit, by the investment of a certain amount of money, which is distinctly different. The Six Nations have no $90,000 in the United States Treasury bearing interest, but have an annuity which is of greater value than the mere interest on $90,000 can produce, and that is the objection which we Oneidas of Wisconsin have to accepting the $20,000 offered. We think we are entitled to more than $20,000 as our share of the money. I can see no reason why the Oneida Indians should be treated any different than any other persons who own annuities. Merely because other tribes have been prevailed upon to accept such an amount is no reason why this tribe should be asked to accept this amount. Now, that is one objection. The other objection is that, in so far as the Oneida Indians of Wisconsin are concerned, the only element which controls the Government, which forces the Government to recognize us as Indians, as a tribe of Indians, is the fact that there still exists a treaty relationship. That treaty is of November 11, 1794. Should we relinquish all benefits under that treaty it would cut off all this relationship with the Government as a tribe. Its legal existence as a tribe would come to an end. The United States thereafter could not treat with the Oneida Indians of Wisconsin as a tribe. It would be exactly the same as the United States can no longer treat with these Indians in regard to this reservation as to land, as a tribe, because that land has been allotted to members of the tribe. Consequently, if we Oneidas, as a tribe, have any claim existing against the United States Government, as soon as we cut ourselves away from the benefits of that treaty we thereby end our existence as a tribe, every claim against the Government terminates at that point because no individual member of this tribe can bring claim against the Government in behalf of the tribe which has no further existence.

No individual member can go into court to represent the Oneida Tribe, or in its behalf, because the Oneida Tribe will have lost its legal existence, in so far as the United States is concerned. In consequence, the question that you have presented here is, in my judgment, not so much the accepting of this $20,000, but it is more than that; it is a question of whether we ought to accept any settlement under this treaty at the present time and thereby terminate our legal status as a tribe, in so far as the United States is concerned, thereby debarring ourselves from recovering any claim against the Government which we may now have. Now, we are getting to something far more important than the mere taking of this $20,000, and, for my part, I think I can not advise the Indians, under the circumstances, to accept such a settlement.

I am very glad we have Maj. McLaughlin, who I know is known in every tribe in the United States as a friend of the Indians, and before whom I feel very free to oppose this agreement, because, knowing that Maj. McLaughlin, being a friend of the Indians, he will not misunderstand my opposition to the tribe to this agreement. I know; I have been in the Indian service myself; I have traveled all over the United States and visited every Indian reservation, and know that the Indians think a great deal of Maj. McLaughlin, and that fact has encouraged me very much to tell him of my opposition and the reason for it, and the opposition of a great many of these people and the reasons for their objections, knowing that our opposition will not be misunderstood.

The Oneida Indians are just as anxious to terminate their relations with the United States Government as the Indian Department is. We are just as anxious to get a commutation of this annuity as the Indian Department is. We realize that the trip, the time it requires to get this 42 cents per capita annuity, is practically a waste of time. We realize that this payment of 42 cents annually to each Indian is absolutely useless and without any sense. But we also realize that there is something that hinges on that little amount—a great deal more to us, at least—which we are bound to consider in this connection, and that is its legal effect on us as a legal organization, known as the Oneida Indian Tribe. Many other things, of course, will come up as these things are considered, but this, in brief, is one reason why, for my part, I think we can not now consider the proposition as it is submitted.

Inspector McLaughlin. Replying to Mr. Wheelock, the last speaker, I wish to say that I have a different view of the last objection that he offered. The closing out of your apportionment of the treaty of November 11, 1794, would not in any way affect your standing as Indians for any back claims that you might have that originated in years prior to this. I will cite an instance of the Indians of Nebraska. They are all allottees and voters. They now have a claim before Congress for confiscated annuities. It passed the House last year, also the Senate with a slight amendment, but in the closing hours of the session the rush of work was so great that, with numerous other measures, for want of time, the slight amendment could not be adjusted in the conference committee. It has again been introduced in Congress, and, as I was informed by several prominent Members, will undoubtedly be enacted into law referring it to the Court of Claims for adjudication. Therefore I regard your contention in your second objection as not well founded. The dissolution of your tribal relations would in no way debar you from the prosecution of a claim or claims which originated while your tribal relations existed, notwithstanding that you have become citizens of the United States, received allotments, have the elective franchise, and are now dealt with as individuals.

I am very glad to have heard your views of the matter that I might explain this. You can relieve your minds of that, so far as your right to prosecute any claims is concerned. The questions in regard to the capitalization of this fund and the paying to you of $20,000 in a lump sum instead of the 42 cents annually, as you are now receiving, has been carefully considered by the department, not only the officials of the Interior Department, but also by those of the Treasury Department, and it has been deemed best for all Indians interested in such perpetual annuities that are so well civilized as you people are to capitalize such funds and pay it to them in a lump sum. That is a matter, however, for yourselves to determine.

Dennison Wheelock. I want to ask you a question. What I had reference to is merely this: I didn't explain quite fully enough. Now, our claims against the Government, of course, are not settled; that is, they are not definite money claims. The amounts will have to be represented and made definite by some proceedings in the Court of Claims, or something like that. Now, suppose the Government of the United States passes a bill giving the Court of Claims or some other court of the United States jurisdiction to hear and determine claims arising in the past out of relations existing between the United States and the Oneida Indian Tribe—the Oneida Indian Tribe of Wisconsin. You know there are shrewd lawyers in Congress sometimes, and a little word like that may make quite a difference. A question comes up before the Court of Claims, and there a learned counsel from the Department of Justice goes up and demurs to our complaint on the ground that the Oneida Indian Tribe has no legal existence. Then what? That is the point I am trying to bring out. Of course, I can understand that we have a tribe here and that Congress has power to look behind and judge for itself what it is to do. Then Congress—some lawyer says, "Well, we'll give them a chance in the Court of Claims and get rid of it."

Then when we get into the Court of Claims we will be demolished and thrown out of court. I am looking at it from a lawyer's point of view now.

Inspector McLaughlin. I wish to say to you people assembled here that there are very few tribes of Indians in the United States but believe that they have some just claims against the Government and are presenting them through attorneys that they have employed, and many applications have been presented to the department for the privilege of employing attorneys to prosecute their claims or to have the cases referred to the Court of Claims for determination, and the department during the past year has been considering, and at the present time very seriously considering, the advisability of recommending to Congress an enabling act permitting any Indian tribe to carry such cases directly into the Court of Claims. Any claim that Indians might have would have to be prepared by their attorneys for submission to Congress so that Congress might authorize its determination by the Court of Claims. Such would certainly be to the interest of you people, and it would be up to your attorney to have the legislation properly worded I have known of many claims that have become a law. The Utes have recently had a judgment rendered by the Court of Claims in their favor for $2,500,000, and the Sisseton and Wahpeton Sioux received about $800,000 three years ago by and through the efforts of their attorneys. They had legislation enacted authorizing the Court of Claims to hear the case and determine it and were successful. There are very few cases of Indians that have been entirely thrown out of the Court of Claims. That is an excellent court composed of five judges; a very fine body of jurists. I have been in their court room and listened to them many times. Any claim that may have originated during your tribal government, notwithstanding the fact that you have passed out from that and become citizens of the United States, will be duly considered.

The fact that you are now citizens of the United States does not affect a claim originating during your tribal government. I wish to make that clear, and it will appear in the minutes, as I have explained it to you. I wish you, in considering this matter, to bear in mind that in case your father, your grandfather, or your great-grandfather had property in the State of New York, or even in Canada, it descends to his heirs. Your removal from Canada to the United States or from the State of New York to Wisconsin does not debar you from receiving your legal share of that estate so long as it can be traced direct. The descendants of the direct heirs of an estate will receive every dollar that their ancestor claimants would have received. I visited the Senecas, of New York, last December with reference to the capitalization of certain funds which they consented to, which they alone were interested in. The two funds aggregated $118,050, which, with the interest, amounted to about $131,000, which they will receive next week. While I was with the Senecas they passed upon this question, and the Seneca council passed a resolution on the 9th day of December last accepting the capitalization of their share of the annuity, and the papers are now filed in the Interior Department at Washington, accepting this fund on the same basis that I have presented to you. They having consented to the capitalization of this fund, I thought it well that you people should understand it. I prepared the roll for that payment, and while preparing the roll a question came up which may be of interest to you—that is, as to the Iroquois custom of recognizing the blood of the mother as the blood of the child.

The State of New York declares the blood of the father as the blood of the child, and as there are many full-blood Senecas who are married to white women I made two rolls—that is, one of children born of Indian mothers or mixed-blood Indian mothers. I also made a tentative roll of 157 persons of Indian fathers and white mothers, and submitted the two rolls at the request of the Indians for the consideration of the department, and only a week ago yesterday the matter was determined by excluding the 157 on the tentative roll, who were not recognized as members of the tribe under the Seneca customs. The Senecas and all the New York tribes, except the St. Regis, adhere to that custom yet; the St. Regis Indians have changed and adopted the laws of the State of New York as to laws of descent.

Dennison Wheelock. The law department you say have passed upon that. Now, the Government, in dealing with these Indians, have not dealt on its political side. It always has dealt—the United States Supreme Court decisions have always been through its political power and not its constitutional power. Its dealings have always been on the side of its political power. These people were not subject to the United States laws, but they were domestic subjects;

it was a domestic nation. Their rights arise by the reason of their political unity, their political existence. Their rights arise for that reason. The relationship between the Six Nations and the United States is a political relationship. Now, your contention there—that a person who has any property that they inherit from their ancestors will be traced down to the uttermost end—that does not hold, because it is under the Constitution of the United States.

But, on the other hand, suppose Canada were annexed to the United States, they lose their existence as a sovereign power, as an independent sovereign power. Canada could not go into the United States Supreme Court as Canada any longer and have any show in the courts, even if they did exist before it was merged into the United States, because their legal existence had ended. The compact of the United States between the States is all regulated by the Constitution. They can bring their action into the United States courts. But suppose any of the European nations wanted to go into the United States Supreme Court; suppose their existence had been dissolved. Suppose they wanted to get some claims from the United States Government. Could they come into the United States Government for their claims? No.

Inspector McLaughlin. I wish to say that the Indians of the United States have made wonderful progress in the last 25 years, and that it is the desire of the department to cut out and eliminate everything that has a tendency to handicap them in their advancement. The capitalization of this permanent annuity is regarded as a very long step in the right direction, and while your arguments, from your standpoint, are very logical, I must contend on the other side. For the good of you people and with your best interests at heart, I am satisfied and confident, and know full well that the capitalization of that little fund that you receive annually—42 cents last year—by which you would receive all that money in one payment of $20,000, would be a great help to you people and would prevent your looking forward to something that did not amount to anything.

As you say, the expense of coming after it is greater than the per capita itself. I don't wish to force this upon you. You are the most intelligent body of Indians, as a whole, that I have ever met; you are all English speaking. I am pleased to see so many here—to see so many who speak English and can explain it to the older members, who may not fully understand English.

Ira Doxtater. I want to ask you a question. Who is to pay us the claims we have in the State of New York, the Government or the State of New York?

Inspector McLaughlin. The Federal Government has no jurisdiction over the lands of the New York Indians; their lands are all under the control of the State of New York.

Ira Doxtater. Then the State would be obliged to pay for all the claims of the Six Nations tribes. Would the Government or you give us an affidavit to that effect? The drawing out of this $20,000 would not affect any other claims we may have?

Inspector McLaughlin. I am willing to give you a statement to that effect over my official signature, or what would be better, I would include such a provision in any agreement we may conclude.

Thomas Cornelius. I wish to present a question. I don't quite understand about the matter of this annuity money. A while ago, as I understand, this $20,000 was to be perpetuated in some way. Now, when you talk about our ancestors away back, we care little about that here. But as far as I understand it, the treaty was made some time ago, before we ever knew anything about it; that this money which we get is a very small amount at present, but, so far as I understand, it is supposed to be forever. About that we have nothing to say. Now, about this $20,000 which is offered us, would be, to my understanding, merely the payment for 20 years ahead. Why not make it 60 years and at the end of 60 years, why not make it a hundred years?

(Abraham Silas and George Doxtater spoke to the Indians in their own tongue.)

Cornelius A. Hill. I am very thankful to meet you here, Mr. McLaughlin, and to propose before us this subject, and, to my wishes, I would like to have you understand that we don't want to be Indians all the time; although we do look like Indians, we are citizens, like other people. We don't wish to be Indians—that is, in the Indian customs and agreements—in any way. And to my knowledge I think we are very lucky to receive that amount of money. I don't believe that we ought to wish anything more. The majority at home are wishing to receive this $20,000. So it would be the easiest way for you to call and take a vote upon it.

Inspector McLaughlin. My friends, if I thought you were prepared to answer understandingly I would put the question as suggested by the last speaker. But I don't wish to hurry you. When the proper time comes I shall put the question and ask you to express yourselves by a rising vote, and shall do so later on; but I don't wish to hurry a matter of this kind.

(John Archiquette and Dennison Wheelock spoke to the Indians in Oneida language.)

Dennison Wheelock. I want to bring up the matter of the visit of the subcommittee of the Senate last year. The question of the commutation of the annuity belonging to this tribe was taken up by that committee in general council held in this hall. The amount of the payment to be made by the Government was thoroughly discussed, both by the Senators composing that committee and also by the Indians who were present at that council. A vote was taken by the subcommittee of those who were present at that council as to whether the tribe would accept the commutation of their annuity or not. A majority of those Indians who were present voted in favor of commuting said annuity. But it was understood by all the Indians present and by the committee who proposed the portion that the total amount paid should not be less than $35,000, if I remember correctly; at least not less than $15 per capita. The Indians at that time were favorable to a settlement on that basis and readily agreed to the proposition. We want to know now why the proposition is made to us for a less amount.

Inspector McLaughlin. Who were the members of that committee?

Dennison Wheelock. The members were Senator Clapp, chairman; Senator La Follette, Senator Page, and Senator Brown.

Inspector McLaughlin. And did they promise to aid in having that amount allowed you—that is, $35,000?

Dennison Wheelock. Yes, sir.

Inspector McLaughlin. That probably accounts for the agreement of Maj. Logan failing to be ratified by that Congress. The House passed the appropriation, and when it reached the Senate, as I understand, the amendment directing the Commissioner of Indian Affairs to reopen negotiations with you relative to this matter was inserted. Nothing is mentioned as to an increased allowance, my instructions being in every respect similar to those given Maj. Logan.

Dennison Wheelock. I remember distinctly the amount per capita was stated at $15 per capita, about twice the amount now offered.

Chester Cornelius. The sum was somewhere between $37,000 and $42,000, so that would make it a per capita payment of $15 per capita, and with that understanding and upon their investigation they discovered we would concede to reach a final adjustment on the premises on that basis.

Inspector McLaughlin. You can all readily see that we could not commute your permanent annuity on a different basis than that of the other tribes.

Chester Cornelius. I understand that. The reason the Senate did not ratify the Logan agreement was because the Senate committee investigated our proposal here. And we never having called upon the Government for support in rations for the subsistence of these people, and as the Oneida Tribe was the only tribe that did not turn against the United States in its former history, the United States ought to concede rather than try to give us something less than the actual value of the permanent annuity.

Inspector McLaughlin. Appropriations have been made for commuted perpetual annuities to certain other tribes on the same basis as now offered to you.

Chester Cornelius. Now, we admit if the people submit to it, why that is all right. But we propose, and we show, that the actual value on the commuting basis of our annuity is in the neighborhood of $15 per capita.

Inspector McLaughlin. That would be commuting at about 10 per cent instead of 5 per cent.

Chester Cornelius. No; that would be on the basis of the Northwestern Life Insurance Co., of Milwaukee, Wis.

Inspector McLaughlin. I feel it my duty to invite your attention to another phase of this question which you should not lose sight of when considering the proposition. Under decision of the Supreme Court on January 5, 1903, in what is known as the Lone Wolf case, the Supreme Court of the United States decided that Congress has the power to legislate for Indians without consulting them.

Chester Cornelius. We are aware of that. If the Indian Department to-day concludes to terminate this annuity, it has power to do so.

Inspector McLaughlin. But the department officials do not wish to do so. They do not wish to force upon Indians anything arbitrarily nor without consulting them and obtaining their consent. In that decision all you who have read it will notice, from the wording of the decree, that it was expected that due consideration should be given the rights of the Indians, and that is one reason why such questions are submitted to Indians rather than arbitrarily forcing new conditions upon them, and that is the reason I am usually sent to confer with the tribes when legislation has been passed affecting them. Commencing in March, 1896, I have since negotiated a great many agreements. The Indians feel much better by being a party to an agreement than having it forced on them against their will. I did not succeed with the Indians of the Uintah Reservation in 1903. I, however, obtained the signatures of about 100 of the Indians of that reservation, nearly one-half of the male adults, but on the White River the Utes absolutely refused to concur in the legislation which had been enacted. But the reservation was opened, notwithstanding their nonconcurrence. It resulted in the White River Utes leaving their reservation and traveling over northeastern Utah, Wyoming, and into Montana. I followed them for several weeks, and they finally returned to their home reservation. I mention this that you may bear in mind that Congress has the power to legislate for Indians, regardless of their wishes.

CHESTER CORNELIUS. We are aware of that. But still at the same time there is a principle involved there. The Oneidas feel that there is a consideration due them, in that they have never cost the Government anything. They feel that it is no more than right that the Government make this concession, though primarily it is an insignificant sum.

Inspector MCLAUGHLIN. You see how unreasonable it would be to commute your portion of that annuity at nearly 10 per cent and those of New York State, who are equally interested with you, at 5 per cent.

CHESTER CORNELIUS. Yes; it wouldn't be any more unreasonable than for a man in personal matters—a man to settle at 5 per cent and another man insists upon 10 per cent. They have simply chosen to accept less. There is no injustice. We are not throwing any injustice on the department when we adhere to our right.

Inspector MCLAUGHLIN. What system do you use in commuting this amount?

CHESTER CORNELIUS. We used the tables of the Northwestern Life Insurance Co. When Maj. Logan was here it was taken up among the more intelligent ones. And the secretary of Senator La Follette went over it and computed that our annuity was somewhere around $42,000. That is easily arrived at.

Inspector MCLAUGHLIN. I don't understand the object of submitting this to you a second time, when you had all agreed to the proposition that I have been directed to make.

CHESTER CORNELIUS. Well, we don't either. It leads us to the belief that the department feels that perhaps we are entitled to more, but will take less.

Inspector MCLAUGHLIN. You read my letter of instructions; do you understand it?

CHESTER CORNELIUS. Yes; we understand. But there is a principle involved, and the nonratification of our agreement with Maj. Logan leads us to believe that our contentions would be valid. Of course the department may unearth something which will show that the original agreement was valid.

Inspector MCLAUGHLIN. Well, whatever is decided upon in this council will be reported by me to the Secretary of the Interior and the minutes will show the proceedings and will enable the department to report to Congress at the opening of the next session, so that the matter may be determined and you people advised in the premises.

CHESTER CORNELIUS. Supposing we presume that as the Interior Department is disposed to give justice and takes the final steps, will it make it any less than the proposal at this time?

Inspector MCLAUGHLIN. You can readily understand that the department could not give you any more than has been given other tribes in similar settlements.

CHESTER CORNELIUS. Yes; we realize that. It is just the same as Indian land.

Inspector MCLAUGHLIN. I would submit to the council the question of whether you would wish to pass upon this now or consider it this evening and express yourselves to-morrow morning.

Supt. HART. The question probably will be, Are you prepared to settle it now, or would you prefer to leave it until to-morrow or next week? I imagine there are some things that will interfere next week. But the question that comes up now is whether you want to settle it now or next week.

Inspector **McLaughlin**. I will remain until next Friday, if necessary, but wish to get away next Thursday. In the Seneca councils the women have as much to say as the men. I don't know whether or not they are so recognized by you people.

(Lehigh Wheelock and Cornelius A. Hill spoke to Indians.)

Inspector **McLaughlin**. My friends, you have discussed the matter among yourselves in your own tongue, which I have not had interpreted to me, but I wish to have you feel perfectly at ease. I make it a rule to give Indians all the time they want in discussing matters and desire them to settle matters to their best interests, and while not wishing to keep you from your homes longer than necessary, I will request your superintendent to ask you whether or not you wish a few days longer to consider this matter.

Briggman Cornelius. Just before the vote is taken, I will ask whether the discussion a few minutes ago regarding the Senate committee, whether this was included in the minutes.

(Last question answered in the affirmative.)

Supt. **Hart**. The question that Col. McLaughlin would like to have settled is whether you wish to have further time for consideration. The time at his disposal will not permit him to meet with you later than Monday. The question is, Would you like to settle this matter right nor or wait till Monday and settle it then?

Cornelius A. Hill. I would rather have the vote taken to-day. By postponing it a week there would be no object in that, because the people have had full notice. This is a large representation, and there would not be any more here then than there is now. I am in favor of a vote now.

Dennison Wheelock (after speaking to Indians in Oneida). I move this council be adjourned to Monday morning at 10 o'clock at this hall.

(Motion seconded.)

Supt. **Hart**. You have heard the motion, that this meeting adjourn till Monday morning at 10 o'clock in this hall. Those in favor of this motion raise your right hand. Those opposed, by the same sign. The motion is carried. Let me explain to you that the time of the inspector is limited, so it is necessary that any discussion you may have must be concluded Monday, so that if we make an agreement there will be time for the signatures. So everybody be here Monday and be prepared at that time.

Dennison Wheelock. I will ask, then, that the interpreters of the various churches will take pains to see that notice is given, and each one of you give notice to your neighbors. The inspector is going to give you all the information he can, but it is necessary for him to take back to Washington a definite agreement.

Inspector **McLaughlin**. I wish to say a few words before closing. That is, to express my appreciation of the way this council has been conducted. I have been in many meetings of white people where there was not so much order as was here to-day. Remember, that whatever your decision is that I am your friend. I feel, however, from my knowledge of Government matters, that it would be better for you to accept the proposition. A bird in the hand is worth two in the bush. By getting $20,000 in cash now is something that would benefit all of you and your children and end the insignificant annual per capita which you are now receiving.

(Council adjourned at 5 p. m.)

(Council reconvened, pursuant to adjournment, at 10.45 a. m. August 28, 1911; 160 adult Indians in attendance; Lyman Powless, interpreter.)

Inspector **McLaughlin**. My friends, I am very much pleased to see such a large representative gathering to-day. Since our adjournment last Friday and up to our reconvening this morning you have had time to deliberate and discuss the proposition among yourselves which I submitted to you last Friday, and I would be pleased to hear from you concerning the matter. We have brought with us a very carefully prepared transcript of the minutes of our former council, which I would be very glad to have passed around in the assemblage that those who read English may know what was said here last Friday.

Amos Baird. I present to the council that we appoint Mr. Wheelock as the proper person to read it and inform us just what was said here last Friday. There was a good many here last Friday that could not read or understand English, so I would have it interpreted into Indian by him.

Inspector **McLaughlin**. I prepared a tentative agreement this morning and brought it with me so that in case you conclude to accept the terms offered the agreement will be ready for signatures. The transcript of last Friday's council proceedings is very lengthy, there being 27 pages of it, and I would like to have Mr. Wheelock read and explain my statements therein to those now here who were not at our opening council.

(Dennison Wheelock, after explaining the council minutes and tentative agreement to those assembled, spoke first to the Indians in Oneida and then said:)

DENNISON WHEELOCK. I think perhaps the Indians better be permitted to council among themselves on this proposition, because there are a number here for the first time who would like to inquire about the proposed agreement. We understand the proposition now.

Inspector McLAUGHLIN. From our discussion of the question last Friday, I feel confident that you people understand the proposition very clearly, and the agreement which I have prepared having been read to you, Mr. Wheelock suggests that you be permitted to discuss the matter among yourselves. I will leave the agreement with you, also the minutes of our last council, and give you what time you require to confer among yourselves regarding the matter.

I will listen to anything you may have to say now or you may first discuss the matter among yourselves, just as you prefer.

(Dennison Wheelock and Briggman Cornelius spoke to the Indians in Oneida.)

Inspector McLAUGHLIN. There being a great many here to-day who were not at our opening council, I think it well to make a few remarks in relation to certain questions that arose during our discussion of the matter last Friday. I have reference to certain matters mentioned by Mr. Wheelock, which he very ably presented. I will read from the record and wish you all to pay attention that you may understand. This is a copy of the council proceedings [presenting the minutes], the original of which will go forward to Washington with my report whether we enter into an agreement or not. I reiterate what I stated in reply to the fears and contentions expressed by Mr. Wheelock [reading his remarks from pages 11, 13, 17, 21, 22, and 23 of the minutes]. These minutes of our councils go forward with any agreement we may enter into, and I am on record here as having made certain statements to dispel the fear expressed that, should you accept this proposition, it might impair your status as a tribe in prosecuting any claims against the Government in the future, and I again repeat that you may put your minds at ease as to that, for this agreement is so worded as to guard against the possibility of any such construction. I wish to call your attention to the different points which I have read from the minutes of our council, which minutes, as before stated, accompanies my report to Washington. I hope you will consider this question carefully and decide upon it among yourselves after due deliberation, and whatever your decision may be, I shall report it faithfully.

LEHIGH WHEELOCK. Let the gentlemen go to dinner, and when they come back we will be ready to take a vote upon it.

BRIGGMAN CORNELIUS. I move that the meeting decide whether we vote on the question now or not.

(Motion seconded.)

Inspector McLAUGHLIN. Before that motion is put, I would suggest a recess, in order to give an opportunity to those now present who were not in our former council to fully understand the proposition, both as to the question submitted by me and the objections of some of your speakers against it. I think it would be no more than right to give these recent arrivals this opportunity, and I simply suggest it for your consideration. I also wish you to bear in mind that every male and female over 18 years of age, belonging to this reservation, has a voice in the decision you may reach.

(Cornelius A. Hill and Dennison Wheelock spoke in Oneida.

John Powless spoke in Oneida and then in English, as follows:)

JOHN POWLESS. The motion is before the house, and I don't think anybody can interfere with it until it is voted upon.

Superintendent HART. How many are in favor of terminating the speeches and proceeding to a vote? Raise your right hands and let us see how many there are. Those who are opposed to this motion and are in favor of continuing the speeches will raise your right hands. The speeches will continue. Now you are at liberty to continue your speeches.

(Recess for dinner.)

(Discussion among Indians in Oneida.)

Amos Baird and Miss Laura M. Cornelius spoke against the commutation of the annuities.

Dennison Wheelock and Thomas Cornelius spoke against the commutation of annuities.

William Kelly and Cornelius A. Hill spoke for the commutation of annuities.

Solomon Cornelius spoke against the commutation of the annuities.

Cornelius A. Hill spoke for the commutation of annuities.)

Dennison Wheelock. Mr. Inspector, I want to call your attention to your letter of instruction, especially to the part that recites the agreement which was made with the Oneida Indians of Wisconsin by Special Agent W. R. Logan for the commutation of their perpetual annuity under the treaty of November 11, 1794, which agreement was concluded with these Indians on January 4, 1909. Your letter of instructions uses the following language: The agreement for the commutation of this perpetual annuity was on the basis of 5 per cent, and it was understood that the funds when capitalized should be placed in the Treasury of the United States to the credit of the tribe and bear interest at the rate of 5 per cent until such time as it might be deemed proper to pay out the same to the Indians or expend it for their benefit. A great deal of discussion has taken place here based upon the assumption that the different officials sent to the Indian tribes are all honest. I don't want to raise the question of the honesty of Maj. Logan, because I know the limitations that were given him in his authority to negotiate the agreement, but I want to say, and Mr. Hart will bear me out and this audience present will bear me out, that if Maj. Logan had represented to this tribe at the time he was negotiating that agreement that that money should be placed in the Treasury of the United States to the credit of the tribe, to bear interest at the rate of 5 per cent indefinitely, or until such time as it might be deemed by the department proper to pay out the same to the Indians or expend the $20,000 for their benefit, as the judgment of the department would conceive to be for the benefit of the tribe, that Maj. Logan would not have had one Indian to sign that agreement.

Inspector **McLaughlin.** I can explain that. I am glad you have raised that question.

Dennison Wheelock. I want our interpreter to explain that part.

Inspector **McLaughlin.** In explanation of the question of Mr. Wheelock, I wish to state that Maj. Logan did not in any way misrepresent to you people when he negotiated with you that agreement of January 4, 1909. The clerk, I presume, in preparing my letter of instructions, copied that paragraph of the original instructions given to Maj. Logan, which was similar to the instructions given to Special Agent Campbell, who negotiated agreements with the Sac and Fox, Pawnees, and Pottawatomies. In this printed document which was before Congress, not only Maj. Logan's agreement as concluded with you people, but a copy of the same transmitted by the Indian Office to Congress, is exactly the same as it was entered into by Maj. Logan with you, and there is no provision whatever in it requiring the money to be deposited in the United States Treasury to the credit of the Indians. This is the provision [reads provision in Maj. Logan's agreement of Jan. 4, 1909].

Now, in order to make that feature still more binding upon the United States, I have inserted a clause in this tentative agreement which I shall endeavor to make plain. It reads as follows:

"Now therefore we, the Oneidas of Wisconsin, a part of the original Six Nations, do hereby agree, providing Congress approves the same and makes the necessary appropriation therefor, to accept in lieu of our perpetual annuities, under the treaty of November 11, 1794, article 6 (7 Stat. L., p. 46), a cash payment of $20,000 in commutation of our said perpetual annuity, based upon our proportion of the annuity now paid to the Six Nations under the said treaty, namely, 5 per cent on $90,000, we, the Oneidas of Wisconsin, receiving at present $1,000 annually as our pro rata of the $4,500 interest money paid to the Six Nations of New York by the Government of the United States, the whole sum of $20,000 to be paid in cash to the Oneida Indians of Wisconsin and distributed pro rata among the members entitled thereto.

"It is distinctly understood that nothing in this agreement shall be construed to deprive the Oneida Indians of Wisconsin, parties hereto, of any benefits to which they may be entitled under existing treaties or agreements not inconsistent with the provisions of this agreement."

When Maj. Logan's agreement reached the Indian Office, that office, in preparing it for transmission to Congress, supplied the words "Seventh Statutes at Large, page 46," instead of the abbreviation of that parenthetical clause as shown in the agreement. That is the only difference [rereads the agreement]. A provision in the tentative agreement which I have prepared reads as follows:

"The whole sum of $20,000 to be paid in cash to the Oneida Indians of Wisconsin, and to be distributed pro rata among the members entitled thereto."

The Logan agreement did not contain this last provision. And I have added the following:

"It is distinctly understood that nothing in this agreement shall be construed to deprive the Oneidas of Wisconsin, parties hereto, to any benefits to which they may be entitled under existing treaties or agreements not inconsistent with the provisions of this agreement."

One reason why I am usually sent out to make these agreements is that I am familiar with the forms and legal wording required.

I have made over 50 agreements with Indians during the past 15 years. I am very careful to guard and protect every interest of the Indians in preparing agreements which I enter into with them, and the wording of this tentative agreement protects your every interest. I have spent many years with the Indians, nearly all of my manhood years have been devoted to the Indian work, and as long as able intend to do all in my power to further their best interests. Whatever you may determine upon in this matter will be perfectly agreeable to me, but I feel it my duty to add that I regard it for your best interests to commute this annuity and do away with your coming after that paltry sum of 42 cents annually. You must not fear that it would affect any claim you may have pending. If you have any good claim against the Government or against the State of New York this has nothing whatever to do with it. This has simply to do with the treaty of November 11, 1794, and I don't want you to get these two questions confused. I assure you if there was the slightest danger in that I would tell you. I feel it my duty to make everything perfectly plain to you.

(Abram Silas and Miss Laura M. Cornelius spoke in Oneida against commutation.

Abram Baird spoke in Oneida against commutation.)

Inspector McLaughlin. The subject was brought up last Friday, of the Senate committee having visited here two years ago, and a statement made by them that the amount you should receive was somewhere between $37,000 and $42,000, and that $15 per capita was the amount they suggested. Supt. Hart happened to have a copy of that conference, which I have since read, and I am going to read from it so that you may all hear what Senator Clapp said, through Mr. Dennison Wheelock, interpreter (p. 1111). The chairman (Senator Clapp) expressed himself substantially as I have to you in his statement that "If you have got any claim against the Government it would not be fair for the Government ot have you release that in settling the annuity." I have guarded against impairing your interests in any and all matters by inserting a clause that nothing except the commuting of this one fund is included in this agreement. The chairman, in making that statement, which you so largely base your contentions upon, simply stated that "the present value of the annuity (recorded on p. 1096 of the hearings of that committee), if it was commuted and put into one amount, either to be paid over or to be put to your credit, would, I think, amount to about $15 a head." The statement was doubtless made by the chairman without having figured out the per capita, as he further stated, on page 1120 of the record, in reply to Joseph (Chester) Cornelius, "that is only approximately, you understand; I am not giving you figures definitely." I told you last Friday that the proposition which I was presenting would give you a per capita of about $8.50. I wish you to bear mind before you determine this matter, especially adversely, that the $20,000 is, in my judgment, as much as you will ever get for the commutation of this annuity. It is true that you can have it continue indefinitely, but the Seneca council having accepted a settlement on the 5 per cent basis, I think it advisable that you accept it on the same terms. It is a matter for you to determine. Remember we have met as friends as we shall part as friends whether we conclude an agreement or not, but I would like to have it appear in the record, in case you do not accept this commutation on the 5 per cent basis, your reasons for not having agreed to this basis of settlement.

(William Kelly spoke in Oneida against commutation.

Lehigh Wheelock spoke in favor of commutation.

August Webster spoke against commutation.)

Lehigh Wheelock. I want to ask a question, Mr. McLaughlin. I want to ask this question; I don't know whether you have any idea or not: How long do you suppose the department will pay this money annually as it has this far? How long do you think it will continue if we do not accept this at this time? Have you any idea?

Inspector McLaughlin. I have no idea. Of course, under the treaty it should continue indefinitely, but Congress has power to change it at any time. They might commute it at any time. That is somthing for Congress to determine.

(Lehigh Wheelock spoke in Oneida.)

Inspector McLaughlin. That suggests a thought to me that I wish to express. The fact that the Senecas and the Tuscaroras and other Indians interested in this fund have consented to the capitalization of a fund for which an appropriation will doubtless be made at the next session of Congress. It is barely possible that they might include your apportionment in that same legislation. Of that, however, I have no knowledge and can not say whether such will be considered or not. But that should influence you, my friends, in considering this. It is always pleasant to be a party to an agreement. Even in trading horses there are always two parties to the trade. In this transaction I represent the Government of the United States and you Oneida people represent your interests here, and in considering the matter you are one party to the trade and the United States the other.

Dennison Wheelock. I am very sorry Maj. McLaughlin and I don't seem to agree, but we want to be good friends just the same, but somehow we don't jibe. Major has stated to you and suggests that perhaps Congress will appropriate the $20,000 at the same time that it appropriates the money for the Senecas in New York and compel us to take our money. I think the inference—the presumption—is directly to the contrary. As I remember distinctly at the time the Senate committee was here, it was indicated at that time that the offer of the Indian Office was exactly the same as the Major has offered to us to-day, which is $20,000. Those representations were made to that committee at that time by the Indians in the same way that I represented it to the Major the other day, that the value of the annuity is something more than $20,000, and at that time the committee, while not admitting in so many terms, virtually acquiesced in that contention, and which is borne out by the fact that the appropriation for the Oneidas, who had agreed with Maj. Logan to accept the $20,000, was rejected by the Senate, which must have been done because of the fact in the minds of these Senators here that these Indians were entitled to something more than $20,000. In consequence the inference is stronger on the side that Congress will not consent to the appropriation of any money to this tribe unless a new agreement is entered into where they accept a $20,000 payment. So that I have no fear that Congress will take any such action, even if it were in their power to do so. They will not appropriate any money to compel these Indians to take a stated amount and to commute their annuity.

Inspector McLaughlin. As I read a few moments ago on page 1096 of the hearing, Senator Clapp says: "We have no authority to answer as to what Congress will do about anything, but only to report what we see and hear." I have read the report of the hearings of that Senate committee with you people, and there is not a line in it that commits the committee to anything other than that one remark of Senator Clapp of $15 per capita, and we can readily understand that he gave those figures only approximately, without figuring it out on the basis adopted by the department in commuting such annuities.

(John Quincy Adams asked questions in Oneida.

Lyman Powless replied to questions in Oneida.

John Archiquette, Lyman Powless, and Nicholas Elm spoke in Oneida.

Lehigh Wheelock and Cornelius A. Hill discussed question in Oneida.

Chauncey Cornelius, Wilson Elm, and Chauncey Baird spoke in Oneida, opposed to commutation.

Cornelius A. Hill spoke in Oneida in favor of commutation.

Dennison Wheelock and Abram Baird discussed question in Oneida.)

Dennison Wheelock. I move that a vote be taken on the acceptance of the commutation of the annuity.

(Motion seconded.)

Superintendent Hart. It has been moved and seconded that we now take the vote on the question before us. You will not vote on the question now, but now is to vote on this question of accepting the commutation of the annuity.

(Abram Baird spoke briefly in Oneida.)

Superintendent Hart. Without a formal motion to that effect, I will put the question to the house in this way: All those in favor of accepting $20,000 in settlement of this annuity raise your right hands. Those opposed by the same sign.

(Vote almost unanimous in opposition to the proposed settlement.)

Inspector McLaughlin. Having presented to you very carefully and clearly the question of commuting this perpetual annuity, and you having rejected it by almost a unanimous vote of this council, I wish very much that some member state briefly the reasons influencing your nonconcurrence, as I desire to have it appear in the record.

Miss Laura M. Cornelius. I move that Dennison Wheelock be authorized by this council to state our reasons for refusing to accept the commutation of our annuity as proposed.

(Motion seconded by John Powless and carried unanimously.)

Dennison Wheelock. For and in behalf of the Oneida Indians of Wisconsin, I desire to present the following resolution to the Secretary of the Interior and the Congress of the United States by the hand of Maj. James McLaughlin, United States Indian inspector:

"*Resolved by the Oneida Indians of Wisconsin in tribal council assembled*, That the Government of the United States be requested to provide laws and means whereby all the relations now subsisting between the Government of the United States and the said Oneida Indians of Wisconsin shall be judicially examined by the United States Court of Claims, and that said court be given jurisdiction to hear and determine all the valid agreements of said tribe against the United States, including any interests which may be due them from the United States, and to determine the present value of the annuity now payable to said tribe under treaty of November 11, 1794, Seventh Statutes at Large, page 46."

The Oneida Indians of Wisconsin have rejected the offer of the Government to take $20,000 in settlement of their annuity payments, principally for the reason that said amount does not represent the true value at the present time of said annuity, nor does it represent the true proportion, based upon the present number of beneficiaries of the Six Nations, which we Oneida Indians are entitled to receive as a share of the $4,500 provided in the treaty of November 11, 1794. We have rejected the proposition also for the reason that we claim to have certain other matters in dispute over rights arising and growing out of its existence as a tribe and nation, and the fear is entertained that if the treaty relations with the United States Government are dissolved certain of those claims would become void and unenforceable. We believe that if all the matters which the Oneida Indians of Wisconsin have against the United States in the form of a claim, interest, annuity, or otherwise can be brought into the Court of Claims, and that court be empowered to hear and determine the cases in dispute, that we would receive a fairer and more equitable adjustment of our matters than if these things were adjusted between the department and the tribe themselves. We have therefore decided to ask you, in your official capacity as an inspector of the Interior Department, to convey to the Secretary of the Interior and the Congress of the United States the resolution which I have submitted, believing that our interests demand an impartial adjudication in conformity with the spirit of the treaty of November 11, 1794, which was entered into solely for the purpose of perpetuating friendship and peace between the Six Nations, of which the Oneida Indians of Wisconsin are a part, and the United States.

Inspector McLaughlin. My friends, I wish to compliment you upon the manner in which our councils have been conducted and the deportment of the Indians here assembled. And while I have endeavored to present the question of commutation of your annuities as plainly as possible, and would like to have had your concurrence, I at the same time fully appreciate the stand you have taken in the premises. Every word that has been spoken in our councils here in English by myself, by Superintendent Hart, and by your speakers will be transcribed by the stenographer and go forward with my report. I feel that my duty has been fully performed, and there is nothing further at this time that I deem it advisable to do or say other than to thank you for the courteous treatment you have extended to me while among you. I might add that if, after returning to your homes and considering this matter for a few weeks or a couple of months, you should look upon it differently and in the light I have been trying to make you see it, you can notify Superintendent Hart and he can notify the Commissioner of Indian Affairs, and I would be very glad to return here to conclude the agreement with you. I shall fully report the proceedings of our council and the conclusions reached and hope to have the pleasure of meeting you again at some future time, and, with best wishes for all of you and for your families, I shake hands with all present.

(Council adjourned sine die at 3.30 p. m.)

I hereby certify that the foregoing 44 typewritten pages is a transcript of shorthand notes taken by me in council held by James McLaughlin, inspector, Department of Interior, with the Indians of Oneida Reservation, Wis., on August 25 and 28, 1911.

HARRY E. BENEDICT, *Stenographer.*

ONEIDA, WIS., *August 29, 1911.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES INDIAN SERVICE,
Oneida, Wis., August 31, 1911.

The honorable the SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: Referring to my report dated 30th instant on my negotiations with the Oneida Indians of Wisconsin relative to the commutation of their perpetual annuities, I have the honor to transmit herewith a paper which was handed me to-day by Dennison Wheelock, a member of the said Oneida Indians, which is substantially a copy of pages 42 and 43 of the council minutes transmitted with my report of yesterday.

The statement recorded on said pages of the council minutes was presented orally by Mr. Wheelock, and upon reading the transcript of same he desired to make some slight changes in the phraseology of his oral statement as recorded, and to also add a clause bearing upon the present population of the Six Nations of New York, as reported in department telegram to me of 29th instant, which corrected statement he requested me to forward for such action as may be deemed proper.

Very respectfully, your obedient servant,

JAMES MCLAUGHLIN, *Inspector.*

ONEIDA INDIANS OF WISCONSIN.

Miss LAURA M. CORNELIUS. I move that Dennison Wheelock be authorized by this council to state our reasons for refusing to accept the commutation of our annuity as proposed.

(Motion seconded by John Powless and carried unanimously.)

DENNISON WHEELOCK. For and in behalf of the Oneida Indians of Wisconsin I desire to present the following resolution to the Secretary of the Interior and the Congress of the United States by the hand of Maj. James McLaughlin, United States Indian inspector:

"*Resolved by the Oneida Indians of Wisconsin in tribal council assembled*, That the Government of the United States be requested to provide laws and means whereby all the relations now subsisting between the Government of the United States and the said Oneida Indians of Wisconsin be judicially examined by the United States Court of Claims, and that said court be given jurisdiction to hear and determine all matters in dispute of said tribe against the United States, including any interests which may be due them from the United States, and to determine the present value of the annuity now payable to said tribe under treaty of November 11, 1794, Seventh Statutes at Large, page 46."

The Oneida Indians of Wisconsin have rejected the offer of the Government to take $20,000 in settlement of their annuity payments principally for the reason that said amount does not represent the true value at the present time of said annuity, nor does it represent the true proportion, based upon the present number of beneficiaries of the Six Nations, which we Oneida Indians are entitled to receive as our share of the $4,500 provided in the treaty of November 11, 1794. The present number of persons of the Six Nation Indians entitled to share in the per capita payment of the annuity provided by the treaty of November 11, 1794, are approximately 7,777. Of this number, 5,476 are residents of New York and 2,301 are the Oneidas of Wisconsin. Taking this number as the basis for computing the share of the Oneida Indians of Wisconsin out of the $4,500 now payable, the result shows that said Indians are entitled to $1,331.50 annually, or $331.50 more than they are at present receiving. This amount capitalized at 5 per cent in accordance with your instructions would make $26,630, which is $6,630 more than offered. Moreover, the New York Indians having received approximately $6,000 more than they were entitled to, it is no more than fair that they be made to disgorge the actual amount of excess in their payments, said amount recovered to be added to the amount payable to the Oneidas of Wisconsin.

We have rejected the proposition also for the reason that we claim to have certain other matters in dispute over rights arising and growing out of its existence as a tribe and nation, and the fear is entertained that if the treaty relations with the United States Government are dissolved certain of those claims would become void and unenforceable. We believe that if all the matters which the Oneida Indians of Wisconsin have against the United States, in the form of claim, interest, annuity, or otherwise, can be brought into the Court of Claims and that court be empowered to hear and determine the cases in dispute, that we would receive a fairer and more equitable adjustment of our matters than if these things were adjusted between the department and the tribe ourselves.

We have therefore decided to ask you, in your official capacity as an inspector of the Interior Department, to convey to the Secretary of the Interior and the Congress of the United States the resolution which we have submitted, believing that our interests demand an impartial adjudication in conformity with the spirit of the treaty of November 11, 1794, which was entered into solely for the purpose of perpetuating friendship and peace between the Six Nations (of which the Oneida Indians of Wisconsin are a part) and the United States.

DENNISON WHEELOCK,
Representing the Oneida Indians of Wisconsin.

ONEIDA INDIAN AGENCY,
Oneida, Wis., August 30, 1911.

[Telegram.]

DEPARTMENT OF THE INTERIOR,
August 29, 1911.

TO MCLAUGHLIN,
Inspector, Oneida, Wis., via Green Bay:

Your telegram 24th. Census Six Nations 1855 showed total 5,000; 3,720 in New York, 980 Oneidas and 300 Stockbridges in Wisconsin. Proportion goods annuity sent Oneidas that year $882. Increased to $1,000 in 1869, when census showed 12,018 in Wisconsin and 4,491 in New York. Ledgers Indian Office show that $1,000 has been sent to Wisconsin Oneidas each year since 1874. Nothing found showing why amount has remained unchanged. Census 1910 shows Six Nations in New York 5,476; Oneidas, Wisconsin, 2,301.

SAMUEL ADAMS, *Acting Secretary.*

[Telegram.]

DEPARTMENT OF THE INTERIOR,
August 24, 1911.

TO MCLAUGHLIN,
Inspector, Oneida, Wis., via Green Bay:

Your telegram 24th. Accurate information as to basis of division of annuity can not be furnished by 25th. Careful search being made in Indian Office. You will be advised by wire of result in two or three days.

SAMUEL ADAMS, *Acting Secretary.*

[Telegram.]

ONEIDA, WIS., *August 23, 1911.*

SECRETARY OF THE INTERIOR,
Washington, D. C.:

When and upon what basis was the apportionment of $1,000 annually made to the Oneida Indians of Wisconsin as their proportion of the permanent annuity of $4,500 to the Six Nations of New York under treaty of November 11, 1794?

The Wisconsin Oneidas contend that an equitable apportionment would entitle them to a greater share than two-ninths of the said annuity, as now received by them. The present number of Wisconsin Oneidas is 2,333, and they wish to know the total number of each tribe entitled to share under the treaty. Request advice by 25th instant, when council convenes.

MCLAUGHLIN, *Inspector.*

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62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 252.

PROCEEDS OF PUBLIC LANDS APPLIED TO AGRICULTURAL AND MECHANICAL COLLEGES.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

SUBMITTING

REPORT OF DISBURSEMENTS MADE TO AGRICULTURAL AND MECHANICAL COLLEGES FOR THE FISCAL YEAR ENDING JUNE 30, 1912, FROM PROCEEDS OF SALE OF PUBLIC LAND.

December 8, 1911.—Referred to the Committee on Expenditures in the Department of Agriculture and ordered to be printed.

Department of the Interior,
Washington, December 6, 1911.

Sir: Pursuant to section 5 of an act of Congress approved August 30, 1890, entitled "An act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an act of Congress approved July 2, 1862," I have the honor to submit herewith a report of the disbursements for the fiscal year ending June 30, 1912, made in the States and Territories under the provisions of that act and of an act of Congress approved March 4, 1907, entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1908," which provides for an increase in the annual appropriations for the colleges of agriculture and the mechanic arts made by said act of August 30, 1890.

The prescribed reports having been received from the several institutions benefited by this endowment on June 26, 1911, I certified to the Secretary of the Treasury the following States and Territories as each entitled to receive the installment of the grant, $50,000, for the fiscal year ending June 30, 1912: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Porto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

The total amount paid out each year by the Government to the States and Territories under these acts from their enactment to and including the installment for the year ending June 30, 1912, is as follows:

1890	$660,000
1891	704,000
1892	782,000
1893	864,000
1894	912,000
1895	960,000
1896	1,008,000
1897	1,056,000
1898	1,104,000
1899	1,152,000
1900	1,200,000
1901	1,200,000
1902	1,200,000
1903	$1,200,000
1904	1,200,000
1905	1,200,000
1906	1,200,000
1907	1,200,000
1908	1,500,000
1909	1,750,000
1910	2,000,000
1911	2,250,000
1912	2,500,000
Total	28,802,000

I have the honor to be, sir, very respectfully,

WALTER L. FISHER, *Secretary.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

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62d Congress } 2d Session } HOUSE OF REPRESENTATIVES { Document No. 256

REPORT OF THE

RAILROAD SECURITIES COMMISSION

TO THE PRESIDENT

AND

LETTER OF THE PRESIDENT TRANSMITTING THE REPORT TO THE CONGRESS :: :: ::

December 11, 1911.—Message and accompanying papers ordered printed and referred to the Committee on Interstate and Foreign Commerce

WASHINGTON
1911

UNITED STATES OF AMERICA ★ GOVERNMENT PRINTING OFFICE ★

LETTER OF TRANSMITTAL.

To the Senate and House of Representatives:

I transmit herewith for your consideration the report which has been made to me by the Railroad Securities Commission, appointed under the authority of section 16 of the act to create a Commerce Court, approved June 18, 1910 (36 Stat., 556). The report evidences for itself the careful consideration which it has received from the commission and I heartily concur in the recommendations it contains and urge that appropriate action be taken to carry these recommendations into effect.

Wm. H. Taft.

The White House, *December 11, 1911.*

LETTER TRANSMITTING REPORT TO THE PRESIDENT.

November 1st, 1911.

The President:

We have the honor to present herewith the report of the Railroad Securities Commission, appointed by you in August 1910 in accordance with Section 16 of the Act of Congress approved June 18th of that year, and organized in the month immediately following.

Early in November, 1910, a notice was issued through the public press inviting all persons having information or proposals concerning the questions under discussion to transmit the same to the Commission. Specific invitations to appear before the Commission or to transmit opinions were also extended to railroad officials, members of various State Railroad Commissions, financiers, authors of books and articles regarding railroads, business men, representatives of commercial, manufacturing and shipping organizations, bankers, lawyers and promoters of railroads and of their securities.

Public hearings were held as follows:

Washington: November 28, 29, December 1, 1910.
New York: December 15–22, 1910, inclusive.
Chicago: January 23–27, 1911, inclusive.
New York: March 6–7, 1911.

At these meetings thirty-four witnesses were heard. The opinions of a still larger number were obtained at informal conferences and by individual members of the Commission. Several hundred letters were sent to other individuals or associations by whom the subject had been considered, and the views received in response to these requests were transmitted to the members of the Commission and duly considered by them.

The accessible literature of the subject was collected by the Secretary and examined by the members of the Commission as fully as the circumstances allowed. Much study was given to the debates in Congress leading up to the passage of the Act under which the Commission was appointed. A personal inquiry into foreign conditions was made by the Chairman in October, 1910.

The Commission has not considered the comparative merits of government ownership of railroads and private ownership under governmental regulation; nor has it attempted to enter into the discussion regarding control of railroad rates, except as to their relation to the issue of securities. It has adhered to the terms of the Act of Congress which confines the functions of this Commission to the consideration of questions connected with the issuance of stocks and bonds by railroad corporations.

Respectfully submitted.

ARTHUR T. HADLEY,
Chairman.

WILLIAM E. S. GRISWOLD,
Secretary.

REPORT OF COMMISSION.

NOVEMBER 1ST, 1911.

The PRESIDENT:

The undersigned have the honor to make to the President the following report as responsive to Section 16 of the Act of Congress approved on June 18, 1910, the material portion of which reads as follows:

> That the President is hereby authorized to appoint a commission to investigate questions pertaining to the issuance of stocks and bonds by railroad corporations, subject to the provisions of the Act to regulate commerce, and the power of Congress to regulate or affect the same * * *.

1. RAILROAD SECURITIES AND INTERSTATE COMMERCE.

The railroad companies of the United States, with only one important exception, owe their present corporate existence to state charters and are subject to state laws regarding their issue of stocks and bonds. But a large and growing proportion of their business is interstate commerce, regulated by federal authority. There is a widespread belief that the rates charged on this business are affected by the amount of stocks and bonds outstanding; that much stock has been issued without being fully paid; and that the dividends on this stock represent an unnecessary tax on interstate commerce. The railroad men as a rule deny that the amount of capital of the roads, either nominal or actual, is seriously considered by their agents in making rates. But it is frequently treated by counsel, commissions and courts as a thing of importance in determining whether rates are reasonable. If capitalization has an actual effect on interstate rates, the federal government is interested in its control.

There is still another way in which the issue of stock for less than par may affect the conduct of interstate commerce. The bondholders who loan money to the corporation may be led to believe that there is a real security behind the bonds equal to the face value of the stock, when in fact a portion of this value represents nothing more substantial than the expectation of the promoters. So far as this deception affects only the individual bondholder, we may leave it to state law to protect him. But if such deceptions become prevalent they inevitably affect the confidence of investors as a body, and our American railroad systems fail to get the full amount of capital needed for their development and for the proper conduct of their interstate business. It is a matter of direct concern to the federal government that the facilities for handling commerce between the states should not be impaired.

These facilities embrace not only steam railroads, but the other agencies of communication and transportation enumerated in the Act to Regulate Commerce. While for brevity the language of this report is largely confined to railroads, the discussion and recommendations apply generally to these other agencies.

2. PRESENT REQUIREMENTS AND FUTURE POLICY.

Starting from different points, investors and shippers, and through them the general public, have come to feel that state legislation has provided inadequate security for their interests in this matter. The question is therefore asked with increasing frequency whether the United States Government should not undertake to regulate the issues of securities by the roads engaged in interstate commerce as a necessary means to its effective control. This question naturally divides itself into two parts: First, what immediate action by Congress will best meet the existing situation; and second, what general principles should guide the federal government in its future legislation on this subject.

As far as concerns the immediate action of Congress, we believe that stringent provisions regarding publicity of stock and bond issues, which will show how far the laws are obeyed, and will enable the federal government to hold the railroad officials responsible for the consequences of not obeying them, will be more salutary and more effective than any new statutory demands. So long as the railways engaged in interstate commerce are chartered by the states and subject to state laws regarding their securities, added federal restriction will tend to create further confusion in a situation already too complex.

But we also believe that the time is near when the difficulties of the present system of dual control, and the conflict of state laws, will become so manifest that further legislation on the subject will be imperative. Unless the constitutional power of Congress to regulate the securities of railroads engaged in interstate commerce is definitely established as being, to the extent that Congress acts upon the subject, exclusive of State control, one of two things seems likely to happen: Either the federal government and the governments of the several states will come to a common understanding as to the principles to be adopted in the control of security issues, or the railroad systems will be given the opportunity to exchange their State Charters for Federal ones. We have therefore discussed in some detail the principles which ought to govern the stock and bond issues of railroads in the United States. Whichever alternative we adopt, we ought to have such a set of principles before us. If we are to bring about a common understanding, we need them as a basis of negotiation. If we consider federal incorporation of railroads the more desirable or practicable alternative, we need them as the groundwork of a federal incorporation law, of which our roads may avail themselves when their interests and those of the public require it. Under the terms of the Act of Congress creating this Commission, it has not considered, as an alternative to these possibilities, the direct ownership of the railroads by the government itself. In that case the government would issue its own securities, and none of the questions submitted to this Commission would then arise.

3. THEORY OF RAILROAD STOCK ISSUES.

Everyone knows that railroad securities are divided into two classes, stocks and bonds; very few people apprehend as plainly as they should the distinction between the two, or understand the real nature of a share of railroad stock. As to the real nature of a railroad bond, there is no doubt at all. It is essentially a note made by the company; a promise to pay a certain amount of money, say one thousand dollars, at a specific date of maturity, and to pay interest at specified rates in the meantime. The obligation is definite. The value is limited by the terms of the instrument.

But a share of railroad stock is of a different, and more complex, character. It represents two things instead of one: That a certain sum has been paid in, and that the holder of the stock has a certain *share* in the ownership of the property, of whatever value that may prove to be. The second of these things is what ultimately gives the stock certificate its value. In the case of a railroad bond the fact that it calls for one hundred or one thousand dollars is a determining factor in what it is worth. But in the case of stock, the fact that the certificate represents one hundred or one thousand dollars is far from being the determining factor. It is but one incident among many. Even in theory it purports merely to show that this was the amount originally paid by the subscriber when the road was built. It does not create an obligation to pay its face value, nor does that face represent its money value as a share. The value varies with the development of the property as a whole. If it has been wisely located and well managed it will be worth more than the amount it represents. If it has been unwisely located, or badly managed, it will be worth less than the amount it represents. The shareholder chose his investment, elected his management and took his risks. If he acted unwisely and fares badly he has no claim that the public should indemnify him. If he did well, the public can not either rightly or wisely fail to recognize and reward his foresight, so long as his road is managed with proper regard to the interest of the community, and for the development of the traffic which it carries.

The principal of a bond is a fixed sum, its interest a fixed charge. The value of a share of stock is essentially variable, its profit essentially indeterminate.

There is a persistent tendency to ignore this distinction; to emphasize unduly the face value of the stock; to treat the shares in a railroad or other public service corporation as claims against the community for the number of dollars they represent, rather than as fractional interests in a more or less hazardous enterprise, in which the investors took risks of loss and chances of profit; to allow corporations to claim immunity from public regulation when the dividend on the face value of the shares is below the prevailing rate of interest; and to subject them to vexatious attacks when this dividend is above the prevailing rate of interest, even when such profit may be a fair compensation for risks actually incurred in the past or a necessary incentive for the investment of new capital and the taking of new risks in the future.

4. STATE LEGISLATION REGARDING STOCK ISSUES.

Nowhere has this tendency been more marked than in the legislation of the several states regarding stock issues of railroad corporations. It has led our law makers to lay too much stress on keeping down the nominal amount of stock, and too little upon getting the actual amount of capital needed and having it properly used.

Nearly all the states require that railroad stock issues should be paid in full at their face or par value. Eighteen have this provision in their constitutions; a majority of the others have more or less definite laws to the same effect. Even without such specific statute the requirement that the shareholder may be called upon to meet the full value of his stock subscription is operative in the absence of legislation to the contrary. Of such legislation there has been relatively little. West Virginia alone, among all the states, expressly sanctions the issuance of stock at less than par, although there are several others where exceptions to the rule of full payment have been allowed, either by general statute or by special act of the legislature in particular cases.

5. EVASION OF STATE LAWS.

Where the strictness of the law regarding capital stock has interfered with the building of railroads in new communities, evasion of its letter or spirit by railroad companies have been frequent. The very rigidity of the statute has caused the public to be negligent in its enforcement. In some cases the laws have been so drawn as actually to invite evasion, by specifically leaving it to the judgment of the directors to decide what constituted an adequate consideration for the shares. The companies have thus been enabled to represent that their stock was fully paid, when this was not in fact the case. Sometimes stock has been issued by the promoters of a company to themselves as a reward for their services in organization and management. Sometimes it has been issued in exchange for rights of way and other forms of assistance to the construction of a new road, without much regard to the cash value of the consideration received. Sometimes it it has been issued to stockholders to represent the increased value of their property, actual or prospective, on the theory that such value represents undivided profits which the stockholders have not received or do not receive in cash, and are therefore entitled to obtain in scrip. Sometimes it has been issued in reorganizations, consolidations, or in exchange for the stock of other companies, on terms not really warranted by the facts in the case. Sometimes stock so issued as full paid has been given as a bonus to induce people to subscribe for bonds.

Besides these direct methods of evasion, there have been more indirect means of reaching the same result. Lines have been built through the agency of construction companies and paid for by the issue of securities whose face value considerably exceeded the actual cost of the roads themselves.

All these practices, with the possible exception of the one last named, have been much more frequent in the past—particularly during the great periods of railroad expansion from 1853–57, 1869–72, 1879–82—than they have been in recent years. This change is not wholly due to increased stringency in the laws. It is partly due to wise administrative measures for their enforcement, and partly to the increased demands of investors in bonds for the real data as to the security underlying them, which has compelled managers of corporations to give greater publicity as to the real facts. The Chicago & Alton reorganization is the only instance in the last decade which has been brought to our cognizance where the public has been offered a large issue of railroad stock (as distinct from the stock of a holding company), based merely upon an estimated increase of value. Recent attempts to capitalize expected profits in connection with other public service corporations or with industrials, do not come within the scope of this inquiry.

6. DANGER OF EVASION OF FEDERAL LAW.

A federal law requiring full payment of all stock issues, without special machinery to enforce it, could be evaded as state laws have been evaded in the past. In fact, the liability to evasion might be greater, because in some parts of the country a statutory requirement of this kind, imposed by the federal government, would be regarded as an interference with the rights of the several states; and local companies attempting to build new lines with stock not fully paid might have the support of local public sentiment in so doing. It is possible that in some instances the federal government could not even count upon the vigorous assistance of the state authorities themselves in trying to enforce such an Act at all rigidly. Such a federal requirement superadded to the state requirement might simply mean that every company would be led to make two deceptive returns instead of one. A federal requirement conflicting with a state requirement might leave us in an even worse case; for the impossibility of obeying both authorities would be made an excuse for obeying neither. This would clearly be true until the paramount authority of the federal government was established.

7. ENFORCED UNIFORMITY NOT YET ATTAINABLE.

To make legislation of this kind effective, it would be necessary to provide federal agencies for carrying out its requirements in detail. We should be compelled either to burden the Interstate Commerce Commission with a large amount of additional work, or to create a new commission to supervise railroad incorporation and construction in different parts of the country.

If we were ready to substitute exclusive federal control for the jurisdiction of the several states over their railroad corporations, much could be said in behalf of the establishment of a national authority to supervise both the issuance of stocks and bonds and the actual expenditure of their proceeds. But, apart from the constitutional difficulties which might stand in the way of such a procedure, your Commission is of opinion that, as a mere matter of expediency, the time is not ripe for any such immediate or forcible transfer of jurisdiction. The local needs of different parts of the country are still divergent. Many railroad problems, both of operation and of control, are still in the experimental stage. Enforced uniformity under federal law would, in the opinion of many, discriminate against the development of new territory, and the formation of independent companies; for a well established system has less difficulty in securing the necessary capital by pledging its credit than an independent projector wishing to develop a new district. These dangers and difficulties may have been somewhat exaggerated. While they undoubtedly exist in certain cases, they are of a sporadic, rather than a general, character. But they are urged with much force, both by state railroad commissioners and by independent builders; and they would constitute obstacles to the effective enforcement of a federal statute. Before such a statute is enacted, it should be clearer than it now is that public opinion would support it. Under such circumstances the immediate assertion of exclusive federal jurisdiction under one general railroad law appears unwise.

Until such exclusive jurisdiction can be established, the creation of a separate administrative body subjecting the railroads of the country to a new system of concurrent supervision, in addition to the many old ones which now exist, does not seem just, expedient or economical.

8. ENFORCED PUBLICITY IMMEDIATELY NEEDED.

In place of any added federal requirements concerning payment for capital stock, your Commission recommends the adoption of provisions regarding publicity which will show the actual facts regarding stock and bond issues in the several states, and the consideration received therefor. Any railroad doing interstate business which issues bonds or stocks should be required by statute to furnish the Interstate Commerce Commission, at the time of the issue, with a full statement of the details of the issue, the amount of the proceeds, and the purposes for which the proceeds are to be used, followed in due time by an accounting for such proceeds, as more fully hereinafter set forth.

An Act of this kind does not limit the freedom of the several states to make any kind of laws which they please regarding their own corporations. If they want them stringent they may make them stringent. If they think they can encourage the investment of capital by permitting the issue of stock for less than par, they can allow such issues. If the result of enforcing existing laws interferes with local needs, they may change the laws. But the companies must indicate precisely what they are doing. They must not attract the bondholders' money by representing that there has been a payment of one hundred cents, when there has been a payment of only fifty cents. They may, if they please, direct the treasurer to set down their partly paid stock in the balance sheet as a liability in full; but they must make it plain to the investor today and to the public tomorrow how much of that liability was represented by cash assets contributed and how much consisted of what is called in English balance sheets "nominal additions to capital." Such liability is of the corporation to its stockholders and not of the public to either.

9. MODE OF PROCEDURE.

Two courses lie open before us in our effort to secure publicity regarding railroad securities: Either to require the express sanction of some administrative body (presumably the Interstate Commerce Commission) before such securities are issued, or to rely on general statutory provisions under which the directors may issue such securities and be held responsible for their proper use. In the case of either of these alternatives, the accounting required must be full and adequate in every respect, and the Interstate Commerce Commission or other administrative authority must be empowered to do whatever may be necessary in its judgment to secure compliance with the statute and to prevent injury to the public. Either alternative would involve the valuation of property and services whenever such valuation may become necessary in establishing the integrity of the financial transactions involved.

The first alternative insures reasonably full publicity before the fact. Official inquiry following the formal application would tend to discourage attempts at evasion; and would probably in many instances prevent the filing of applications for issues which are questionable either because of their financial unsoundness or because they duplicate existing lines instead of adding to public convenience.

Your Commission nevertheless prefers the second alternative and doubts the expediency under present conditions of a general law forbidding railroads to sell securities without specific authorization in advance, it being understood that the face value of these securities is not to be construed as an obligation on the public. Authorization in advance would tend to create an impression on the part of the investing public of a guaranty or official recognition of values, which no administrative authority can safely give. The absence of such recommendation by this Commission is intended to make it clear that no such guaranty should be given. A growing railroad has constant need of money, and its officers and directors are the best judges of the amount of its annual requirements. It is manifestly to the interest of the company and of the public that a road should get its money as cheaply as it can. The policy of allowing a floating debt to accumulate with a view to its extinction by the sale of permanent securities upon the completion of its improvements is not a good one, and should be avoided wherever possible. An administrative body whose approval was required in advance for the sale of securities would have great difficulty in always acting promptly enough to enable the roads to avail themselves of favorable money markets, and avoid the creation of floating debt, and might do its work so carelessly as to result in shielding the directors from responsibility, instead of acting as a safeguard to the public.

We are disposed to leave for the present to state commissions the responsibility of passing upon the questions of public convenience and necessity involved in the building of lines to be constructed within the limits of their several states, and to rely on full publicity as to the use of the proceeds of the sale of securities and of other assets as a safeguard against financial abuses.

10. FACTS TO BE DISCLOSED.

With this end in view, every company should be required to furnish to the Interstate Commerce Commission at specified dates a full statement, including the names of the parties concerned, of all financial transactions that have taken place during the periods covered by the report, whether in cash, in securities, or in other valuable considerations, and whether embraced in income account or outside of it. This statement should also include the disposition of surplus. Every company should be further required to compile for the information of its shareholders facts in regard to the financial transactions of the company for its fiscal year, of such a character and in such form as the Interstate Commerce Commission may direct.

The Interstate Commerce Commission should have the power to investigate all such financial transactions and to inquire into the bona fides thereof; the right to call for the production of books and papers of railroad companies, construction companies or other companies with which the railroad company shall have had financial transactions, for the purpose of enabling it to verify any statements so furnished to it; and the power to examine into the actual cost as well as the value of property acquired or of services rendered. In all transactions investigated, from the purchase of supplies to the acquirement of new lines by consolidation, every interest of the directors should be disclosed, and adequate penalties provided for any failure to make such disclosure.

This enumeration is illustrative and not inclusive. Some of these items the Interstate Commerce Commission now requires in the reports of the companies; other items are not now required and probably cannot be under the present Act to Regulate Commerce. All of them call for facts or groups of facts which the Interstate Commerce Commission should be empowered to ascertain in the administration of an amendment to the Act to Regulate Commerce, concerning which we have prepared and attach to this report a more definite suggestion.

11. PHYSICAL VALUATION.

"Physical valuation" of railroads in its bearing on capitalization has been to some extent advocated, and to a greater extent opposed, upon the idea that, if undertaken by the United States Government, it will be made a justification for reducing the amount of the outstanding securities of the railroads to the figure thus ascertained, or for preventing them from issuing new securities when the amount of their outstanding stocks and bonds exceeds the physical value of their properties as so determined. Should a valuation of the physical property of railroads be made, it ought not, if properly applied, to involve either of those dangers.

An attempt to scale down old securities is clearly out of the question. Apart from the obvious constitutional difficulties of such a course, considerations of public expediency of themselves forbid it. The direct loss from the unsettlement of legal and equitable relations would be very great. The indirect loss from the withdrawal of confidence in American railroad investments would be immeasurable. Such a readjustment would become archaic almost from the outset, because an adjustment of securities based upon the values of today might be totally erroneous tomorrow. It would be equally inadvisable, in cases where outstanding securities were in excess of the physical valuation, to prohibit the issue of new securities until physical value had become equal to the amount of securities outstanding; because this principle, if generally applied, would prevent roads so situated from securing the capital needed for the service of the community.

Whenever a railroad company acquires new property in return for the issue of its securities, or in expending the proceeds of such securities, every means should be placed at the disposal of the Interstate Commerce Commission to ascertain the value of such property as accurately as possible. A fundamental, though not necessarily a controlling, element in value, is cost of reproduction. This is true of property in general; it has been specifically affirmed of railroad property by the Supreme Court of the United States. Eminent railroad men who have appeared before this Commission have stated that in their opinion cost of reproduction or physical value was the most important single element in determining the true value of the railroad as a whole. Indeed, we believe it to be in the interest of railroads, no less than of those who use them, that the Interstate Commerce Commission should be given broad powers and adequate means for valuation of the physical property of railroads as one element in determining fair value, whenever, in the judgment of that Commission, this is of sufficient importance to warrant such action. This will give the public information which it is entitled to demand, and which can, in our judgment, be better and more economically obtained in this way than in any other. The attempt to oppose a system of physical valuation of this kind tends to give countenance to exaggerated estimates of the amount of water in railroad stocks.

12. RESULTS TO BE EXPECTED.

We believe that the powers granted to the Interstate Commerce Commission by the preceding recommendations may be found large enough to protect the public, without the necessity of passing a law that should require specific approval in advance of the amount and purpose of stock and bond issues.

We do not say that the enforcement of a law of this kind will be easy. The public in all parts of the country has become accustomed to the evasion of laws concerning capital stock. It is far easier to pass a radical measure which is going to be evaded than to secure obedience to a conservative one. But we are confident that full public knowledge of the facts will diminish the evils and misunderstandings described in the opening paragraphs of this report as being the chief sources of the demand for immediate federal action, and will at the same time furnish the proper foundation on which to base more thorough-going reforms.

One of these evils was that bondholders were at times deluded into the belief that there was a security behind their bonds which did not exist, and that the railroad company was mortgaging a piece of property when it was only capitalizing an expectation. They thus entrusted the control of their money to men who had comparatively little at stake. If a profit was made, the promoters could appropriate it; if money was lost, the loss fell on the bondholders. Roads built largely with borrowed capital at the beginning have been prevented from subsequently obtaining the credit which they might otherwise command. They have therefore been less able to give to the shippers or to the travelers the facilities which are requisite no less for the convenience and safety of the public, than for the profitable utilization of the railroad itself. To the extent that we lessen debt, we shall increase the power of the roads to raise money when the public needs added facilities and shall at the same time reduce the chance of default and lessen the severity of commercial crises.

But to most people the danger of these financial consequences seems a less serious thing than the danger that the railroads will tax the users of the road for the sake of making profits on capital not actually furnished. The necessity for paying interest on bonds, and the desirability of providing for dividends on stock are sometimes urged as a justification for increased rates; and they are frequently put forward as a reason why existing rates may not fairly be interfered with by law. To meet this danger, so far as it is a real one, and to avoid this misapprehension so far as it is a misapprehension, it is essential that the stock should be what it purports to be. If it purports to represent one hundred dollars paid in on every share, one hundred dollars should actually be paid in. If it purports only to be a participation certificate, giving a proportionate interest in any profits that may be earned, it must be understood that this is its essential character, and that if it claims any further rights than this, it must prove them by specific evidence. This is in the interest of all parties—of the honest investor and the progressive manager, of the shipper, the traveler and the general public.

If full publicity be given to the facts, we shall also lessen the fraudulent creation of debt. It is the degree of publicity as to the facts, rather than the stringency of the law, which gives the people any real protection. A stringent law inadequately enforced and secretly evaded is the worst thing that can possibly be offered the public, because it gives color to claims which have no foundation in fact.

13. CONFLICTS OF JURISDICTION.

While we do not think that the time is ripe for a sudden and quasi-compulsory transfer of the direct control of the stock and bond issues of interstate railroads from the states to the federal government, we cannot help recognizing that there are conflicts of jurisdiction in the construction, operation and financing of interstate railroads which may more and more embarrass interstate commerce and necessitate a larger degree of federal control, or even result in federal incorporation.

A road organized by an individual state is subject to state jurisdiction regarding certain rates and facilities and purposes for which securities may be issued, and is responsible to the state courts for the performance of its functions. The instant that its cars pass across the state line or that its shipments are routed to points in other states it becomes responsible to the Interstate Commerce Commission and to the federal courts. Constitutionally Congress has paramount authority over interstate commerce and by its action can abrogate any previous action of the states which may prove inconsistent therewith. Practically it is easy to see how a conflict may arise between local and national requirements regarding facilities or methods. The state may prescribe one way of doing business; the national government may prescribe another, and forbid the one ordered by the state. It is only by the care of our railroad commissioners, state and national, that serious difficulties of this kind have been avoided in the past.

Even more perplexing are the questions which may arise in connection with the control of interstate railroad rates. The local legislatures and commissions have ideas of their own regarding rates which may differ in some respects from the ideas of Congress or of the Interstate Commerce Commission. But the relation between through and local rates is frequently so close that the two sets of things cannot be arranged on independent principles. The reasonableness of the through rate may depend upon its relation to the local rate, and vice versa. It becomes increasingly difficult each year to leave a corporation free to fix its local rates subject to the jurisdiction of state commissions and state courts only.

Thus the exercise by a state of its authority over railroads organized or operating in its territory, prescribing terms on which, and the limitations within which, it may issue securities, may directly interfere with and embarrass interstate commerce, when the issue of such securities is essential for raising funds to be applied in furnishing the necessary facilities for its interstate traffic. One or more instances of this have been brought to our attention. That they have not been more numerous is doubtless owing to the discretion and conservatism which have usually characterized the action of state commissions. Such state regulation of the security issues of interstate railroads may be wise or unwise from a local point of view; but the state determination cannot control the federal right. This danger of possible interference with interstate commerce necessarily tends to increase with the number and activity of state commissions; and it was for the protection of such commerce against any interference that the power of regulation was vested in the federal government.

14. DEVELOPMENT BY INTERCORPORATE HOLDING.

Some states have laws compelling railroads within their borders to be organized under the laws of the states in which they are located and forbidding foreign corporations, so-called, from constructing, owning and operating lines thus located. The effect of these and other similar statutes have been largely avoided by a system of intercorporate holdings, under which a corporation organized in one state which owns the stock or the major part of the stock of a road in another state can secure the capital necessary for construction or betterment without subjecting itself to the restrictive laws of the state where the money is actually spent. One or two instances will show how this system works.

The state of Texas has a law which rigidly limits the extent to which roads in that state may be capitalized. It seems to have been the expectation of those who passed the Texas law that it would be a protection to all those interested in the proper operation and regulation of railroads. But it has had the practical effect of making it difficult to get directly by the sale of securities of railroads located in Texas, the necessary capital for their improvement; because if a road was already capitalized to an amount in excess of the official valuation of the State Commission, no further securities could ordinarily be placed upon the property for necessary improvements, until this deficiency was made good. Under these circumstances companies organized in other states which own lines in Texas needing added investments of capital in order to handle their traffic in that state economically, frequently resort to a simple expedient. Instead of issuing securities of the Texas company they pledge the credit of the parent company and put into a collateral trust any hitherto unpledged securities of these Texas roads that they may have in their treasury, and if they have none, then other securities or property, thus issuing under the authority of another state securities whose proceeds are to be spent in Texas.

When the Chicago, Milwaukee & St. Paul Railroad wished to build its Puget Sound extension it had to pass through several states whose laws forbade corporations chartered under laws of other states to build roads within their borders except as a connection or prolongation of a road actually built to the state line. In order to conform to these restrictions, the St. Paul Road would have had to build its line slowly, step by step, instead of doing work in several states at once and putting the road through as promptly as possible. To avoid this difficulty it had to organize a separate company to build the road in each state which had such a law. This in itself was not a serious evil; it simply involved additional expense, to have separate corporations do things piecemeal which might have been done as a unit without such intermediaries. But it tended to render state control less effective, instead of more so. The system thus forced upon the St. Paul Road would give every opportunity for deception to a road which might want to deceive.

Where a company builds its own roads, it is possible to find out what they cost and have the matter properly entered in the balance sheet; but where a corporation is artificially encouraged to divide itself into several parts, the parts that do the constructing can sell their finished roads to another part, at an abnormal profit. This transaction may furnish the parent company an excuse for an over-issue of securities. If the securities thus over-issued are paid for in full, it will put a certain amount of cash into the treasury of the newly organized company for which it becomes very difficult to hold the directors of the parent company to strict account. If they are not fully paid for, it simply means that the alleged profits of the parent company may be made the excuse for furnishing its stockholders, in the shape of a dividend payable in its own stock, a number of pieces of paper whose face value is greater than the amount actually contributed.

15. CONTROL BY INTERCORPORATE HOLDING.

Of the total amount of railroad capital outstanding on June 30, 1910, $3,952,000,000, or more than twenty per cent of the whole, was held by railroad companies themselves. About one-third of this was bonds, and two-thirds stock. There is also a large additional amount of railroad securities owned by various "holding companies," which are not, technically speaking, railroad corporations and do not make return of their capital to the Interstate Commerce Commission, but which control the policy and direct the operation of the roads whose securities they have purchased. Any artificial stimulus to these intercorporate holdings is a public evil. Where a railroad controls the operations of another railroad by owning a majority of its stock, or where a holding company controls the operations of several roads in the same manner, we have all the disadvantages of consolidation, without getting all of its advantages. We get the centralization of financial power; we do not get all the economy of operation which should go with it.

Apart from this general danger, we open the way to several specific evils.

Where a railroad controls the operations of another road by the ownership of a majority of its stock, there is constant danger that the minority holders will not be fairly treated. The road thus purchased has become part of a large system, and is operated by the representatives of the whole system. It is almost certain that the advantage of the whole will be preferred to the separate interests of the part in matters of operation, traffic and finance.

Again, the existence of two or more companies under the same management, having separate organizations but united control, invites the concealment of financial transactions by the shifting of charges from one company to another. We have already shown how this may happen in the construction of a new road. It is equally possible in the operation of an old one.

16. FINANCIAL DANGERS.

A further effect of intercorporate holdings is to change contingent charges into fixed ones. A railroad company buying the stock of another company almost always issues collateral trust or other bonds to pay for it; in other words, it puts the stocks into its own treasury and sells the bonds to the public. As long as the road is prosperous this change does little harm. In fact, it may appear to do good. When a company has been able to buy a five per cent stock by the issue of its own four and a half per cent bonds, there is an apparent profit of one-half per cent annually on the transaction to the company and an apparent reduction in total charges which it must meet. But with any diminution in traffic, the bad effect of the change is at once obvious. The interest on the bonds remains a fixed charge against the company. The effect of a loss of dividends would have been felt chiefly by the individual stockholders; a default, or even a threatened default, of interest has an effect on the credit and confidence of the country as a whole, and may precipitate a financial crisis.

The extent to which the credit of our railroads is being pledged is evidenced by the change in the proportion of railroad stocks and bonds held by the public. In 1899 these were nearly equal;

$4,307,000,000 stocks and $4,336,000,000 bonds. Eleven years later the figures given by the statistician of the Interstate Commerce Commission were $5,578,000,000 stocks and $8,865,000,000 bonds—a serious disproportion. The growth of intercorporate holdings is responsible for a considerable part of this change. This disproportionate growth of fixed interest-bearing obligations as compared with stock is primarily the result of the issuance of bonds in payment of roads acquired, and would still have taken place even if title had been taken in fee instead of through stock ownership; but the latter method, by reason of its facility for the issue of collateral trust bonds, has unquestionably been an important factor in creating this disproportion.

So long as different parts of what is naturally a connected system of railroads are chartered by separate states there are likely to be artificial obstacles to consolidation; and while these obstacles exist, we shall find it difficult either to check the tendency toward increased intercorporate holdings, or to deal with the evils incident thereto. Each instance of intercorporate holdings thus furnishes an added argument for federal charters.

17. ALTERNATIVE METHODS.

In the present state of the law, there are two distinct methods by which we might avoid conflicts between the state and federal governments in the control of railroad stock and bond issues, and deal with the problems of construction and finance incident thereto.

One method relies on a full interchange of views between the Interstate Commerce Commission and the commissions of the several states, as a means of securing harmony. If it is possible for the members of all these different bodies to arrive at a common understanding on a question of public policy, they usually have little trouble in getting the necessary authority from Congress and the state legislatures to put a consistent policy into effect. This way of doing things was illustrated in the legislation regarding safety appliances a few years ago; it is just being illustrated in connection with control of railroad accounts to-day. In each of these matters a great deal of trouble was made by conflicting requirements; in each, a full discussion of the questions involved was followed by a substantial agreement on the main points, and the good sense of the several commissions prevented serious difficulties from being raised about minor ones.

Whether we could secure a similar agreement on matters of finance, where the conflict of interest between different localities is more serious and the differences of opinion are more fundamental, is open to doubt.

If the public interest of the United States as a whole should be jeopardized by these differences, we can perhaps have recourse to a

Federal Incorporation Act, which shall permit railroads to exchange their state charters for federal ones. We believe that such an Act could be so drawn as to offer advantages in the conduct of interstate traffic without unduly conflicting with local interests. The most important of these advantages would be: (1) The right to construct lines needed for interstate commerce, under proper local supervision, and with proper regard for local needs, but without the agency of local corporate organizations; (2) The right to have rates supervised by a single authority which could pay proper regard to the mutual relations of local traffic and interstate traffic, instead of two separate authorities dealing with the two things independently; (3) An equitable system of taxation which would distribute to the several states their proportionate parts of taxes levied on both the tangible and intangible property of the railroad by some harmonious plan.

It is too early to make definite choice between these two alternatives. But it is not too early to indicate the principles which should guide our legislation concerning stocks and bonds in either event. For our progress toward putting these principles into effect will necessarily be slow by either method. If we try to bring the views of different legislatures into harmony, the discussion must be deliberate in order to have any chance of success. If we rely on permission to exchange state charters for federal ones, we must give both the railroads and the states time to learn the wisdom of availing themselves of this opportunity.

If in the discussion that follows we have seemed to have more definitely in mind the adoption of a federal charter than federal control of state corporations, it is because this method enables us to make our suggestions in clearer and more concrete shape; the underlying principles and aims would be substantially the same in the two cases.

18. TREATMENT OF EXISTING ISSUES.

Whatever alternative we adopt, any disturbance but a voluntary one of the existing amounts or status of bonds or stocks validly issued is clearly inadmissible; and in general there should be as little disturbance as possible of the relations to-day existing between different classes of security holders. These relations often seem unnecessarily complicated, both in their provisions regarding distribution of income and in their delegation of voting powers. But the confusion and litigation which would result from the attempt to disturb them would outweigh any possible good to be obtained.

The absence of any attempt to base security issues upon revaluation will emphasize the true character of our American railroad stocks, as being essentially praticipation certificates giving a right to a proportionate share of whatever profits may be earned, rather than evidences that a certain specific amount of money has actually been invested in the property.

19. PRICE OF NEW ISSUES OF STOCK.

A most important and difficult question is that of the price at which new stock may be issued. We believe that no restrictions except those of publicity should be placed upon the power of the directors to issue new stock pro rata to their stockholders at or above par, even though the price received be less than the existing market value of the old stock. The experience of Massachusetts has shown that the attempt to prohibit the issue of stock below its market value has hampered the investment of capital and has distinctly interfered with the development of facilities. If this has been the experience of Massachusetts, where capital was abundant, we can hardly expect better results in states where capital is more scarce.

A further objection to any attempt to compel the sale of new stock at a price above par is that it implies a certain warrant that this value, thus publicly fixed, will be maintained in the future, on the old stock as well as the new. In thus attempting to limit profits, it may actually tend to guarantee them.

The question whether the directors should be allowed to issue stock below par is a harder one to answer. On the face of the matter it seems as though the requirement that no stock should be sold at less than par was a fundamental principle of sound finance. So it is, if it results in the sale of stock at par; not so, if it results in the sale of bonds at a discount. If a road whose stock, for any reason whatsoever, sells below par is prohibited from issuing stock at less than par, it means that it must raise all its money by bonds. It is compelled to go more and more deeply into debt. The worse the financial position of the road, the stronger is the compulsion and the heavier are the interest charges on the bond. To compel the weaker roads to pursue their present policy of issuing fixed interest-bearing obligations by reason of their inability to sell stock at par may before long, by reason of a large crop of receiverships, result in intensifying the acuteness of the next panic and in prolonging the subsequent business depression.

If the stock bears upon its face the statement that each share represents a contribution of one hundred dollars or any other specified sum which constitutes its par value, we see no easy way of avoiding this difficulty. If a document says one hundred dollars has been paid, one hundred dollars ought to be paid. The most that can properly be done is to allow companies which cannot sell such stock at par to arrange for the "amortization," or gradual cancellation, of any necessary discount by appropriating, out of future income or surplus which may accrue subsequent to the issue of such stock an annual sum having precedence over dividend payment, to be so applied on capital account as to make the deficiency good in a period of no very great length. If proper provision is made for thus cancelling or amortizing this deficiency, such stock may properly be made, by general law, non-assessable. The reluctance of directors to impair their ability to pay dividends for a term of years will prevent the abuse of this power. We believe the issue of stock at a discount, under safeguards like these, to be far preferable, in the interest of the public, to the sale of bonds at a high rate of interest, or what amounts to the same thing, at a large discount.

20. SHARES WITHOUT PAR VALUE.

We do not believe that the retention of the hundred dollar mark, or any other dollar mark, upon the face of the share of stock, is of essential importance. We are ready to recommend that the law should encourage the creation of companies whose shares have no par value, and permit existing companies to change their stock into shares without par value whenever their convenience requires it. After such conversion any new shares could be sold at such price as was deemed desirable by the board of directors, with the requirement of publicity as to the proceeds of the sale of such shares and as to the disposition thereof; giving to the old shareholders, except in some cases of reorganization or consolidation, prior rights to subscribe pro rata, if they so desired, in proportion to the amount of their holdings.

As between the two alternatives of permitting the issue of stock below par, or authorizing the creation of shares without par value, the latter seems to this Commission the preferable one. It is true that it will be less easy to introduce than the other, because it is less in accord with existing business habits and usages; but it has the cardinal merit of accuracy. It makes no claims that the share thus issued is anything more than a participation certificate.

The objections to the creation of shares without par value are two in number: First, that their issue will permit inflation, by making it easy to create an excessive number of shares; and second, that it will produce a division of roads into two classes, those whose shares have a par value and those whose shares have not. The second of these objections does not appear to be a very serious one. There are listed on the stock exchanges today, side by side with one another, shares of the par value of one hundred dollars, shares of the par value of fifty dollars, shares with very much smaller par value, and a few, like the Great Northern Ore Certificates, with no par value at all. The share sells in each case simply for what the public supposes it to be worth as a share. The danger of inflation deserves more serious consideration. We believe, however, that it is more apparent than real, because shareholders will be jealous of permitting other shareholders to acquire shares in the association except at full market value, and will not permit the issue of such shares to themselves at prices so low as seriously to impair the market or other value of their holdings. Shares either with or without par value, and whether sold at par or above par or below it, should, except in cases of consolidation and reorganization, be offered in the first instance to existing shareholders pro rata.

The issue of stock without par value offers special facilities for consolidation and reorganization.

Where two roads have consolidated whose shares have different market values, it has been the custom to equalize the difference by the issue of extra shares of the consolidated company to the owners of the higher priced stock. This practice has always tended to produce increase of capital issues, and may readily cause the new stock to be issued for a consideration less than its par value. The only alternative was to scale down some of the old stocks; and this often involved serious difficulties, both of business policy and of law. By the simple expedient of omitting the dollar mark from the new shares, the number can be adjusted to the demands of financial convenience, without danger of misrepresentation or suspicion of unfairness to anyone.

In the case of reorganizations, the advantage of shares without par value is even more obvious. It is here that the necessity and justice of getting money from stockholders is greatest. It is here that the impossibility of getting them to pay par for new shares is most conspicuous. We believe that in such cases the public interest would be subserved and the speedy rehabilitation of the roads promoted, by requiring the conversion of the common stock and encouraging the conversion of the preferred stock into shares without par value; the certificates simply indicating the proportionate or preferential claims of the holders upon assets and upon such profits as might from time to time be earned.

All of these considerations seem to apply with equal force to the securities of railroads under state incorporations, and we believe the laws of the several states could with advantage be modified so as to provide for the issuance of stock without par value.

21. NEW ISSUES OF BONDS.

It seems to be generally agreed that no limitation should be placed on the price at which bonds can be sold, but any discount should be cancelled or amortized during the life of the bonds by the appropriation each year, out of annual income or surplus accumulated after the issue of the bonds, of not less than the proportionate amount of the discount. In the case of convertible bonds, the same provision should hold good, with the additional restriction that after conversion the laws governing the amortization of discount on stock sold below par should apply also to the unamortized discount on convertible bonds. While the convertible bonds themselves may be sold below par, the conversion price of the stock should equal its face value; except of course in case of shares without par value, where no limit as to conversion price is necessary, nor any amortization after conversion. The premium on bonds redeemed before maturity or the unamortized discount on bonds thus redeemed should be charged to profit and loss, and provision made for the gradual cancellation of this charge out of income.

Issues of convertible bonds should be offered to stockholders pro rata, in the same manner as stock itself, to the extent to which they may choose to avail themselves of the privilege of subscription.

22. DIVIDENDS AND RESERVE FUNDS.

No attempt should be made by statute to limit railroad profits to a fixed percentage, or to treat a high cash dividend as necessarily indicating extortion. Railroad charges must be reasonable; but to try to control rates by arbitrarily limiting profits is to put the manager who makes his profit by efficiency and economy on the same level as the one who tries to accomplish the same result through extortionate charges.

Scrip, bond and stock dividends should be prohibited. They are commonly justified on the theory that the company has in times past put earnings into the property which it might have divided among the stockholders, and that the scrip dividend merely reimburses the stockholders for what they have put into the road. But these sums were put in, either to make depreciation and obsolescence good, or as actual additions to the property. In the former case the capital account ought not to be increased. In the latter case any such increase gives color to the claim that the shippers have been taxed to pay for the improvement of the property, and that the stockholders have appropriated the result.

Many of the stock dividends in past years have represented an increase in the value of the property, not paid for either by investors or by shippers, but due simply to the foresight of the management in locating and organizing its business wisely. Under these circumstances a stock dividend to represent this increased value may possibly have been justified, but it is far better to let the increased value be shown by a higher rate of dividend on the existing shares of stock, instead of by an addition to their nominal amount.

If we prohibit scrip dividends, we can permit the creation of proper reserve funds without having them regarded with suspicion as being a pretext for future issues of unpaid stock. Sound finance demands that the companies should set aside such funds, out of income, to "defray the cost of progress." They can thus provide against obsolescence, or make improvements which add nothing to the earning capacity of the property and ought not therefore to be made the basis of increased capital liability.

Failure to encourage the creation of reserve funds out of surplus earnings would cause a constant increase of fixed charges, already heavy enough. Whatever gain there might be in a present lowering of rates would be merely temporary. Investors and shippers would alike be misled; the former into a fancied security as to the permanence of dividends, the latter into the belief that such reduction in rates was permanent. Ultimately such a course would lead either to higher rates or to steadily diminishing dividends and consequent impaired credit. Railroad credit is an important asset to the entire country, and it should not be wasted. In encouraging, therefore, the creation of reserve funds, we are only suggesting that the present generation shall not be unmindful of its obligations to future users of transportation.

Cash dividends are not likely to be as large as scrip dividends, because the former involve the distribution of a corresponding amount of cash, while the latter do not. Under these circumstances the prohibition of scrip dividends should of itself encourage the creation of proper reserve funds. In this as in other respects, all these three proposals—freedom from arbitrary restriction of profits, prohibition of scrip dividends, and creation of proper reserve funds—hang closely together. Any one by itself may be of doubtful value. Taken together, they should produce a result advantageous to all.

23. TREATMENT OF INTERCORPORATE HOLDINGS.

Whatever may be the evils due to such holdings, an unqualified prohibition of the ownership of stock of one road by another involves too much disturbance of existing relations to warrant us in advocating it. Much will be accomplished if we do away with the unnecessary extension of these holdings and provide for equitable dealings between the representatives of the purchasing company on the one hand and the holders of minority interests on the other.

If a railroad company is allowed to build the necessary lines into other states for the handling of interstate business, instead of being compelled to create some separate company to do this, one fruitful reason for intercorporate holdings will be done away with. If we have full requirements of publicity regarding the purchase of stock of other companies, and have the disclosure of directors' interests therein, another source of danger is avoided. If, finally, we can remove artificial obstacles to consolidation by permitting the issue of shares without par value, we shall be able to avoid the expense of double corporate organization where a single company would better serve public economy and convenience. In this and other respects, many of our difficulties are due to the attempt to rely upon competition in a business which, in private hands, should be treated in essentials as a regulated monopoly.

Any company, or group of companies, which has purchased a majority of the stock of any existing road may properly be required to buy the minority stock at the same price as that paid for the majority stock where the price has been uniform. If the price has not been uniform, the purchase should be either at the average price paid for such holdings or at a price to be fixed by appraisal, at the option of the minority stockholders.

If a company has acquired control of the common stock of another, but not of its preferred, it should be required either to buy the preferred stock or to make the preference cumulative. For the continued existence of a non-comulative preference under such conditions will offer constant temptations to unfair dealing, if not to actual fraud.

In order to avoid vexatious opposition to consolidation by a minority it should be possible, after such an offer had been fairly made, to convey the property by three-fourths vote of the shareholders and dissolve the corporation. The purchase of less than a majority of the stock of one line by another (except as one of a group of railroads jointly holding the stock of some connecting company) should be discountenanced and as far as possible prohibited.

What we have here said applies only to intercorporate holdings arising out of railroad affiliations permissible under existing statutes and not in conflict with declared principles of public policy.

24. REASONABLE AND UNREASONABLE EXPECTATIONS.

An agreement on these lines will enable us to avoid many existing conflicts of jurisdiction, and will incidentally promote honest and responsible management of our railroads in every department. So far as it does this, it will be a good thing both for investors and for shippers. But the extent to which a law regarding security issues, however well drawn, can protect either the investor or the shipper is quite limited.

Most of those who advocate legislation on this subject hope for wider results than can possibly be reached by any such means. One man expects that a good law on stock and bond issues will be of great service in enabling courts and commissions to protect the shippers against overcharge. A second believes that both investors and shippers can be benefited by an abolition of the profits of the promoter. A third thinks that our securities can be standardized, so that the investors will be sure of getting the returns which are promised them. A fourth demands that public confidence be so restored that the community may get the railroad capital it requires. The attainment of these results is beyond the power of an Act of Congress. The chief thing that such an Act can do is to remove obstacles which bad laws and worse practices have placed in our way.

The attempt to render direct protection to the shipper by a federal statute regarding stock and bond issues is attended with difficulties which are almost insuperable.

In the case of Smyth vs. Ames the Supreme Court of the United States held that the amount of bonds and stocks outstanding was but one among many matters to be considered in deciding whether rates were reasonable. This therefore is the law as determined by precedent; and it is fortunate that the dictates of precedent coincide with those of business sense. The attempt to make the face value of securities issued the determining factor in rates would result in putting a premium on roads which had been speculatively, not to say dishonestly, built or managed, by allowing them to charge higher rates on account of the inflated capital thus produced. And, wholly apart from any such speculation or dishonesty, the amount of stock capital and bonded debt, even if paid for at par, is a very inaccurate and incomplete criterion of the value of the property devoted by its owners to public use. It has at best only a historical importance, as showing what property was or purported to be worth at the time of the incorporation. It does not show what it is worth, or what rates may properly be charged for its use, ten years later or even one year later.

25. PROMOTERS' PROFITS AND SERVICES.

We are told that the profit of the promoter represents a wholly unnecessary burden upon the American public, and that so far as this profit can be done away with it will be good for all parties. Neither of these statements is quite true. The promoters, using the term in a broad sense, may be divided into two classes: constructors who build a road whose future is uncertain, in the expectation of selling the stock for more than it cost them; and financiers who induce the public to buy the bonds of such roads. Both of these classes, if they do their work honestly, render useful services to the public. The constructor gives our undeveloped districts the benefit of new roads, which they would not get without his intervention; and if he does his business well he builds the roads more economically than anybody else could. The financier renders an equally important service in collecting the capital of the investors to build new railroads or improve old ones. On the Continent of Europe this is done by the banks. The great banking concerns of Germany use a very considerable part of their deposits in carrying industrial enterprises during their initial stages before their merits have been demonstrated, and then disposing of them to the actual investor at a profit in order to set their capital free for the floating of new concerns. But in the United States the power of the banks to do this is limited by law and by custom; and so far as they either cannot or do not, it must be done by financial houses especially organized for the purpose.

Our American system undoubtedly involves grave possibilities of fraud. The man who is constructing a road is tempted to persuade people to loan him money on inadequate security. The financiers may be tempted to wink at this deception. Worst of all, the roads thus built may be built for sale at an inflated valuation. The promoter may obtain his profit, not from the legitimate increase of the value of his property, but from his power to persuade the management of some larger system to buy the branch road for more than it is really worth. These are evils which publicity would do much to check. Where there is no fraud, the promoter renders a service for which he is entitled to fair remuneration.

26. STANDARDIZATION OF RAILROAD SECURITIES.

We are told that if it was possible to standardize food by a pure food law, it ought to be possible to standardize railroad securities by a securities law. It is possible—to the same extent and no more. The pure food law enables a man to know what he is buying. It does not certify that the thing he buys is good for him. That is left to his intelligence. The government cannot protect the investors against the consequences of their unwisdom in buying unprofitable bonds, any more than it can protect the consumers against the consequences of their unwisdom in eating indigestible food. Unless we are prepared to have government guarantees of interest on railroad investments—a most questionable proposal—the only way in which we can standardize railroad mortgages is the one which we use with savings bank mortgages. We can insist on double security. We can say that at least half the capital of a railroad must be subscribed by stockholders, and that not more than half may be raised by borrowing—a difficult requirement under existing conditions. Until we are prepared to pass some law of this kind the investor must depend upon his own intelligence to protect him from loss. The function of the government is to see that correct information is available.

27. RESTORATION OF PUBLIC CONFIDENCE.

There was a time when the efforts of the banking authorities in most of the states were directed toward getting the discount rates as low as possible. The bank commissioners in those days regarded themselves as the representatives of the merchants who wanted loans. They made little or no attempt to safeguard the stockholders and creditors of the bank. Those were the days of wildcat banking. The country has passed beyond that period—not solely or primarily because it obtained a national banking law, but because it administered that law with due regard to the security of the stockholders and creditors of the bank as well as its customers. We have not developed our ideas of railroad management as far as we have developed our ideas of bank management. The subject is a more complex one. The apparent conflict of interests between the management and the customers is greater with a railroad than with a bank. As a result of this misunderstanding, the necessary development of railroad facilities is now endangered by the reluctance of investors to purchase new issues of railroad securities in the amounts required. This reluctance is likely to continue until the American public understands the essential community of interest between shipper and investor and the folly of attempting to protect the one by taking away the rewards of good management from the other.

We are told that a good law regarding national incorporation would of itself create public confidence. This is an over-statement. Such a law would remove one set of sources of distrust, but there is another set, more fundamental, which can only be removed by the exercise of intelligence on the part of the American people as a whole.

28. AMOUNT OF ADDITIONAL CAPITAL REQUIRED.

There is a widespread belief, based on imperfect examination of the evidence, that the amount of capital needed for the future development of our railroad system is small in proportion to that which has been required in the past; that the profits on such added investments of capital are reasonably well assured; and that we can therefore fix attention predominantly if not exclusively on the needs of the shipper without interfering with the necessary supply of new money from the investors.

It is quite possible that the building of additional railroad mileage will be far less rapid in the future than it has been in the past, but the capital needed for the development and the improvement of the mileage already existing is enormous, even if we built no new mileage at all. The outstanding stock and debt of the railways in the United States averages less than $60,000 a mile of line. This figure is bound to be greatly increased in the immediate future.

As our population grows denser, we shall need more and more to approximate European standards of construction by the increased amount of double track, the abolition of grade crossings, the development of station facilities both for passengers and for freight, and many other improvements scarcely less fundamental. While our railroads are perhaps even better equipped than those of Europe for the economical handling of large masses of long distance freight, they are far from being adequately provided with appliances to secure the convenience of the public or the safety of passengers and employees. The cost of all these things is very great. The average capitalization per mile of railroads in Germany is $109,000, in France $137,000, in Belgium $177,000, in Great Britain $265,000; and, contrary to the commonly received opinion, much of this excess of cost as compared with American roads, is due to other causes than the price of real estate—an item in which our companies have had a great advantage. The cost of European roads has been largely due to improvements which we have not yet made and many of which we must make in the future as population grows denser. The thousands of millions of dollars needed for these purposes must be raised by the sale of securities.

29. PRESENT RETURN AND FUTURE SECURITY.

Neither the rate of return actually received on the par value of American railroad bonds and stocks today, nor the security which can be offered for additional railroad investments in the future, will make it easy to raise the needed amount of capital.

The ratio of interest and dividends to outstanding bonds and stocks of American railroads is not quite four and a half per cent in each case. The average ratio of dividends to the capital of national banks is between ten and eleven per cent. If it be objected that the value of the stocks of our railroads is in considerable measure due to the growth of the community rather than to the cash originally invested, and that the bonds and stocks of railroads should therefore be compared with the combined capital and surplus of the national banks, we find that these banks have for the last three years maintained an average ratio of dividends to capital and surplus combined of over six and a half per cent. If we look not at the sums divided, but at the sums earned, we find the same difference of profit in favor of the banks.

Nor can the security which most of our railroads offer be regarded as exceptional. The underlying bonds of the older systems are doubtless secure. It is not probable that even a grave commercial crisis will affect the return of a trunk line first mortgage. But very little of the new capital can be raised on securities of this kind. Most of it must come either from bonds which will not be a first lien for many years, or from new issues of capital stock. The investors in these securities, and especially in stocks, take risks which cannot be accurately forecast. Apart from probable fluctuations in traffic and possible increases in cost of operation, new inventions may at any time render much of their present plant antiquated. The substitution of electricity for steam is but a type of the many changes which railroads may be compelled to make, any one of which might involve large additions to their cost without the assurance of corresponding additions to their return.

30. WHAT CONSTITUTES A REASONABLE RETURN.

We hear much about a reasonable return on capital. A reasonable return is one which under honest accounting and responsible management will attract the amount of investors' money needed for the development of our railroad facilities. More than this is an unnecessary public burden. Less than this means a check to railroad construction and to the development of traffic. Where the investment is secure, a reasonable return is a rate which approximates the rate of interest which prevails in other lines of industry. Where the future is uncertain the investor demands, and is justified in demanding, a chance of added profit to compensate for his risk. We can not secure the immense amount of capital needed unless we make profits and risks commensurate. If rates are going to be reduced whenever dividends exceed current rates of interest, investors will seek other fields where the hazard is less or the opportunity greater. In no event can we expect railroads to be developed merely to pay their owners such a return as they could have obtained by the purchase of investment securities which do not involve the hazards of construction or the risks of operation.

31. POINTS TO BE EMPHASIZED.

In concluding its report your Commission desires to emphasize the following points:

1st. The questions presented for its consideration do not include or involve a comparison of the policy of governmental ownership of railroads, with the policy of private ownership in any of its forms. The Act of Congress under which the Commission was appointed provides that its duty shall be "to investigate questions pertaining to the issuance of stocks and bonds by railroad corporations, subject to the provisions of the Act to regulate commerce, and the power of Congress to regulate or affect the same." The Commission has, therefore, concerned itself exclusively with questions which arise under a system of governmental regulation of privately owned railroads.

2nd. It has not seemed to the Commission profitable to consider at length what the government might have done in times past, nor to enter upon a historical recital of incidents arising out of the unregulated issue of securities. Railroad development has gone so far and such a vast volume of securities has already been issued, that the only questions of real importance today are whether, under the conditions which now exist, it is desirable for the federal government to regulate the issue of future securities, and if so, to what extent and in what manner. In other words, the large volume and complex relationships of the outstanding securities, the issue of which has not been regulated at all by the federal government and has not been effectively regulated by the state governments, make it impossible to treat the question of present or future regulation as it might have been treated if these securities were not already in existence.

3rd. It would have been equally unprofitable for the Commission to enter upon an elaborate discussion of the power of Congress to regulate or affect railroad securities, at a time when important cases are pending which will go far to determine the scope and extent of federal authority in this and other closely related subjects. Such a discussion could only state the opinion of the members of the Commission regarding the constitutional power of Congress. The issues themselves will remain undecided until the Supreme Court decides them. Whatever may be the ultimate outcome, the present fact which faces us is that constitutional questions of far-reaching consequence are to-day unsettled and must remain so for a considerable time. Under these circumstances, any attempt by Congress to adopt the policy of Federal regulation to the exclusion of state regulation, would be premature. On the other hand, to superimpose Federal regulation upon state regulation would add to conflicts and complexities which, in the public interest, should be diminished rather than increased. Your Commission believes that for the present an earnest effort should be made on the part of state authorities to harmonize existing requirements, both of law and procedure, and that for the future careful consideration should be given by Congress to the preparation of a permissive federal incorporation act for railroads engaged in interstate commerce.

4th. Many, if not most, of the abuses connected with railroad securities arise out of an almost universal failure to recognize the distinctions which exist and should exist between bonds and stocks. A bond is an obligation to pay a fixed sum of money at a stated time. A stock certificate is merely the evidence of ownership of a share in the property, profits, and risks of a corporation. Most of the evils of which investors and the public complain have grown out of the attempt to give to stock a face value in terms of money. Even if the state laws prohibiting the issue of stocks for less than par were literally enforced all that the recitals on the face of a fully paid share of stock as to its par or money value would signify is that at the time of the issuance of the share there had been paid into the corporation an amount of money (or other valuable consideration) equal to the par value of the share. They do not even purport to indicate that at any time after the original issue of the stock the corporation was possessed either of the money or the money's worth. The real value of the stock certificate depends upon the manner in which the money has been invested. The Commission is, therefore, of the opinion that it is far more important to ascertain just what are the facts connected with the issue of securities and what is actually done with whatever money has in fact been realized from the stock which is issued, than merely to make sure that the par value of the stock was paid in at the time of issue.

5th. If we were compelled to assume that rates are to be materially influenced either in their making by the railroads or in their regulation by the Government by the amount and face value of the stocks and bonds outstanding, it seems to your Commission impossible to escape the conclusion that these securities should be issued only under Governmental regulation. Your Commission, however, believes that the amount and face value of outstanding securities has only an indirect effect upon the actual making of rates and that it should have little of any weight in their regulation.

In so far as the value of the property is an element in rate regulation the outstanding securities are of so little evidentiary weight that it would probably be of distinct advantage if courts and commissions would disregard them entirely, except as a part of the financial history of the property, and would insist upon direct evidence of the actual money invested and of the present value of the properties. For this and other reasons discussed in the body of the report, your Commission recommends that the Interstate Commerce Commission should have authority and adequate funds to make a valuation of the physical property of railroads wherever the question of the present value of these roads is, in the judgment of that Commission, of sufficient importance. It is hardly necessary to add that your Commission does not believe that the cost of reproduction of the physical properties, however carefully computed, is the sole element to be considered in determining the present value of a railroad, or that the outstanding securities could or should be made to conform to any such arbitrary standard.

If railroad securities were to be issued only after express authorization of each particular issue by the Interstate Commerce Commission or other governmental agency, it is difficult to see how the Government can thereafter escape the moral, if not the legal, obligation to recognize these securities in the regulation of railroad rates. In view of the vast extent of the railroad systems of this country and the magnitude of the financial interests involved, both on the part of the railroads and of those who pay the rates, your Commission believes that the possible consequences of such a system of regulation are too serious to warrant its adoption at the present time.

6th. Upon the whole, your Commission believes that accurate knowledge of the facts concerning the issue of securities and the expenditure of their proceeds is the matter of most importance. It is the one thing on which the federal government can effectively insist today; it is the fundamental thing which must serve as a basis for whatever additional regulation may be desirable in the future.

Respectfully submitted.

ARTHUR T. HADLEY, *Chairman.*
FREDERICK N. JUDSON.
FREDERICK STRAUSS.
WALTER L. FISHER.
B. H. MEYER.

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SUGGESTIONS RELATING TO PUBLICITY, INDICATING POINTS UPON WHICH AMENDMENTS TO THE ACT TO REGULATE COMMERCE MIGHT BE BASED.

[This Commission has not considered it proper to present a formal draft of a statute.]

Every railroad corporation subject to the provisions of the Act shall file with the Interstate Commerce Commission on or prior to the date of issuance of any stocks, bonds, notes or other evidences of indebtedness payable at periods of more than twelve months after the date thereof, and now or hereafter to be authorized, a certificate of notification in such form as the Commission may from time to time determine and prescribe which shall show:

First: (*a*) The total amount thereof authorized.

(*b*) The number and amount thereof outstanding prior to the date of such certificate; the amount thereof theretofore retired; the amount thereof then undisposed of, and whether such amount is held in the treasury of the corporation as a free asset, or pledged, and if pledged, the terms and conditions of such pledge.

(*c*) The number and amount thereof then to be issued and whether to be sold, pledged or held in the treasury of the corporation as a free asset; if such securities are to be sold, the terms of sale if a contract for such sale has been made, and if any part of the consideration to be received therefor is other than money, an accurate and detailed description thereof; if such securities are to be pledged, the terms and conditions of such pledge.

(*d*) The number and amount thereof remaining unissued.

(*e*) If the issue is of shares of stock, the certificate shall also show the par value thereof, or if the issue is of shares of stock that have no specified nominal or par value, the number of such shares, and the number of then outstanding shares previously issued.

Second: The preferences or privileges granted to the holders of any such shares of stock; the dates of maturity, rates of interest of any such bonds, notes or other evidences of indebtedness, and any conversion rights granted to the holders thereof, and the price, if any, at which such shares or bonds may be redeemed.

Whenever any securities set forth and described in any certificate of notification as pledged or held as a free asset in the treasury of the corporation shall subsequent to the filing of such certificate be sold or repledged or otherwise disposed of by the corporation, such corporation shall file a further certificate of notification to that effect, setting forth therein all such facts as are required by subdivision (*c*) of the foregoing first paragraph.

The provisions in regard to certificates of notification shall apply to notes or evidences of indebtedness running for periods of twelve months or less, and to the pledging or repledging of stocks, bonds or other evidences of indebtedness to secure such notes or evidences of indebtedness running for periods of twelve months or less, except that such certificates may be filed within ten days after the issue thereof instead of on or prior to the date of such issue.

Every such railroad corporation shall furnish to the Commission, at such time or times as the Commission may require, in addition to its income account, a balanced statement of its receipts and expenditures on capital account, and of the surplus of the income account accruing during the period covered by such statement, as well as of all other financial transactions that have taken place during such period, with whom had, whether in cash, in securities, or in other valuable consideration.

The Commission may also require the carrier to furnish any further statements of fact or evidence that it may deem necessary or appropriate.

The certificates of notification, and any other written statement furnished to the Commission under the Act, shall be signed and verified by the auditor, comptroller, or other acting fiscal head of the carrier.

It shall be the duty of the Commission to enforce these provisions, and to make public by appropriate means the information received, as, in its discretion, it may deem proper; and such certificates of notification shall at all times be deemed public records and open to inspection.

The Commission may also require the carrier to compile for the information of its shareholders such facts in regard to the financial transactions of the carrier for its fiscal year in such form as the Commission may direct. The carrier may be required by order of the Commission to disclose every interest of the directors of such carrier in any transaction under investigation. The Commission shall have the power to investigate all such transactions and to inquire into the good faith thereof, to examine the books and papers of carriers, construction or other companies or of firms or individuals with which the carrier shall have had financial transactions, for the purpose of enabling it to verify any statements furnished, and to examine into the actual cost and value of property acquired by, or services rendered to, such carrier.

Appropriate penalties, including fine and imprisonment, should be provided for violation of these provisions.

O

62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 303.

REPORT OF UNITED STATES DELEGATION TO GENERAL ASSEMBLY OF INTERNATIONAL INSTITUTE OF AGRICULTURE.

LETTER

FROM

THE SECRETARY OF STATE,

TRANSMITTING

REPORT OF THE DELEGATION OF THE UNITED STATES TO THE GENERAL ASSEMBLY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE, 1911.

DECEMBER 13, 1911.—Referred to the Committee on Agriculture and ordered to be printed.

DEPARTMENT OF STATE,
Washington, December 12, 1911.

Hon. CHAMP CLARK,
Speaker of the House of Representatives.

SIR: I have the honor to transmit herewith, for the information of the House of Representatives, the report of the delegates of the United States to the General Assembly of the International Institute of Agriculture which convened at Rome, Italy, in May, 1911.

The Department of State feels itself under obligations to transmit this report to Congress by reason of the fact that the delegates attended the general assembly in pursuance of legislation by Congress (deficiency act approved March 4, 1911); but no request for the printing of the report is to be implied from the act of transmission. To the contrary, the Department of State is opposed to the printing of the report if the cost thereof is to be chargeable to it under the joint resolution approved March 30, 1906, "to correct abuses in the public printing and to provide for the allotment of certain documents and reports," inasmuch as the appropriation for printing for the Department of State is not sufficient to provide for the department's printing and also for the printing of documents of this description, as to which the department serves merely as a conduit.

I have the honor to be, sir,
Your obedient servant,
P. C. KNOX.

WASHINGTON, *September 1, 1911.*

The SECRETARY OF STATE.

SIR: The delegates on the part of the United States to the General Assembly of the International Institute of Agriculture which convened at Rome, Italy, in May, 1911, have the honor to submit the following report:

The general assembly is the legislative body of the International Institute of Agriculture. It consists of delegates from each of the countries which are parties to the treaty, dated June 7, 1905, by which the institute was created, and which number at present 48. The general assembly meets at intervals of one or two years to determine the policies and adopt the budget of the institute. The executive authority of the institute is the permanent committee, consisting of one delegate from each adhering country. A considerable proportion of the members of the permanent committee spend substantially all their time in Rome, which is the seat of the institute. The permanent committee, like the cabinet in most European countries, is not only the principal executive body, but also the one that initiates most of the measures which come before the general assembly. In accordance with the terms of the treaty creating the institute, the permanent committee submitted to the various governments, some weeks in advance of the present meeting of the general assembly, a program of subjects to be considered. At the meeting the permanent committee submitted various reports and recommended various resolutions, the reports and resolutions on each subject being presented on behalf of the committee by one of its members, designated as a reporter.

The members of the general assembly were divided, for the purpose of considering the various subjects on the program, into four commissions or committees, most individual delegates being members of two or more of these commissions. The reports and recommendations of the permanent committee were submitted to these commissions and carefully discussed. The conclusions of the commissions were then embodied in a formal report to the general assembly, which, in most instances, approved the recommendations of the commissions without change.

Of the 48 countries adhering to the institute, all but 2 were represented by delegates to the general assembly. The number of delegates varied from 1 to 6 from each country, the total number present being 99.

In connection with the detailed official report of the actions taken by the general assembly, hereto annexed, the members of the delegation wish to call special attention to a few of the most important of these actions.

One question which was considered by the general assembly and which will require special action by the United States relates to the publication of the reports and bulletins of the institute in the English language. In accordance with the treaty creating the institute French is the official language. The funds at the disposal of the institute have been sufficient thus far to permit the translation and printing of the various reports and bulletins in the English language as well. The short monthly bulletins, dealing with crop conditions, have also hitherto been published in three or four other languages besides French. It is apparent, however, that additional funds will be required hereafter if such translations are to be published. It was the feeling of the institute that, despite the fact that English is doubtless the most important commercial language, it is not proper that the expense of an English translation or of translations into a limited number of other languages should be met out of the general funds of the institute, which are contributed by all of the 48 countries, some of which derive little direct benefit from these translations. It was agreed by the institute that additional funds for the publications ought hereafter to be secured through paid advertisements to be inserted in the publications and through subscriptions to the publications or direct contributions by such countries as desire the printing of the reports in languages other than French.

In view of this action of the institute, the American delegates decided informally, after consultation, and subject to your approval and to the action of Congress, that an English edition of the publications ought to be secured by direct appropriation on the part of the English-speaking countries adhering to the institute.

The estimated cost of tranlating into English and printing these documents is about $12,000 per annum, of which amount the delegates from the United States are of the opinion that the United States should contribute $5,000, leaving the United Kingdom of Great Britain and Ireland, the Dominion of Canada, and other English-speaking countries to contribute the remaining amount needed.

It is therefore recommended by the delegates that in the next estimate submitted by the Department of State to Congress an item of $5,000 be included, in addition to other moneys appropriated for the institute and for the payment of delegates thereto, as a proper amount for the United States to contribute as its share of the cost of translation of the publications into English and their printing in that language. There was an informal understanding with the executive officers of the institute that if this were done the institute would supply as many English copies of each document to the United States as is possible on the basis of its contribution, which publications will be subject to distribution by our Government, either through the Department of State or through the Department of Agriculture, or otherwise. It is believed by the delegation that these copies might advantageously be distributed free of charge to agricultural colleges, agricultural societies and institutions, and the leading agricultural papers of the United States.

The publications which it is thus proposed to distribute in the English language consist of the monthly Bulletin of the Bureau of Agricultural Intelligence and Plant Diseases, the monthly Bulletin of the Bureau of Economic and Social Intelligence, and the monthly Bulletin of Agricultural Statistics. Each of these publications contains much valuable information. The first named summarizes the experience of all the leading countries, as shown in official and private publications, with respect to methods of agriculture, and particularly methods of combating plant diseases. The second contains information of great value regarding cooperation in agricultural industry, such as cooperative marketing, agricultural banking systems, and the like. The third contains official estimates of the acreage planted to various crops, their condition during growth, and the amount of harvest, together with information regarding domestic animals.

Another recommendation of the general assembly, in which the delegates from the United States cordially concur, is that steps be taken "to appoint an international technical commission, composed of eminent specialists from the adhering countries, to take up the study of effective international protection against the invasion and spread of diseases of plants and insect pests." It is well known that much more than half of the varieties of insects injurious to plants were imported into the United States from other countries, while the proportion of plant diseases thus introduced is probably still greater. For the most part both insects and diseases were introduced through imported nursery stock and seeds, and might have been prevented either through proper quarantine regulations at our own ports of entry or by proper inspection at the points where the shipments originated.

One important function of the proposed international commission would be to suggest and help to frame such legislation or regulations in the various countries as would minimize the danger of future spread from one country to another of either plant diseases or injurious insects. There can be no doubt, also, that such a commission having available all the information acquired in all the countries as to the best methods of treating diseases and of controlling or destroying insects, would be able, through the study of so wide a range of data, to reach invaluable results. If such a commission were created, not only the conclusions it might reach, but the data upon which those conclusions were founded, could be made available for the use of the scientists engaged upon like problems in our National Department of Agriculture and in our numerous State agricultural colleges and the benefit sure to result can hardly be estimated. On account of the direct advantage sure to accrue to the United States, therefore, as well as by reason of the duty which rests upon us as one of the family of nations to bear our share in any work that is undertaken for the benefit of all, the delegates earnestly hope that when this recommendation is brought before you, as it will be in due course from the permanent committee of the institute, it may have your careful consideration.

It was a matter of pride to the delegates from the United States that the Campbell system of dry farming—first developed and demonstrated by a citizen of our country—was made the subject of one of the most elaborate and interesting papers presented for the consideration of the general assembly. This report was presented by the delegate from Hungary, M. De Miklos de Miklosvar, and was the subject of long and able discussion. It was shown that over 90 per cent of the countries represented in the institute are directly or indirectly interested in the solution of the problems connected with dry farming, and it was decided that the report of M. De Miklos de Miklosvar should be forwarded to the adhering Governments and their attention especially called to the questions it raises.

Another very important action taken by the institute, perhaps the most important of all things considered, related to the form of the reports of the condition of growing crops. Without entering into technical details, it may be said, in general terms, that the question at issue was whether the institute should undertake to present these reports in the form of definite estimates of the percentage of the probable yield as compared with average yield, or whether the reports should be expressed in a much more indefinite manner by a system of "notes of classification," which are practically equivalent merely to descriptive words regarding the condition of the crop.

The first of these two plans is substantially the plan employed in the United States, and the American delegates vigorously advocated its adoption by the institute as the only method which would permit combination of the reports of the several countries into a single statement, and the only one which would give information requiring no further interpretation by the reader. It is a matter of much congratulation that the general assembly saw fit to adopt this first plan. Practically this means that the Institute of Agriculture will seek hereafter to induce all the countries in its membership to adopt a basis of crop reporting substantially similar to that employed by the United States, or at least to furnish facilities by which their crop reports can be converted to a basis similar to that employed in the United States. The members of the delegation from the United States are of the opinion that the action taken on this subject at the meeting of the general assembly assures an ultimate great measure of success to the work of the institute in crop reporting. They were convinced that only through an official international institute of this character would it be possible to secure complete and correct information regarding crops and crop conditions, and thus to prevent improper manipulation of prices of agricultural products.

It must be recognized that the perfecting of the system of international agricultural statistics proposed by the institute will necessarily require a very considerable period of time. However perfect in principle may be the scheme of compiling the statistics devised by the institute, it can not be applied in practice in a thoroughly satisfactory manner until all the leading countries have placed their systems of agricultural statistics upon a uniform basis, or at least upon such a basis as will permit the conversion of the statistics to a uniform principle. It is encouraging to note that, largely through the influence of the institute, there has already been a rapid movement toward uniformity in crop statistics of the various countries during the past few years, and the attitude of the delegations of most of the countries at the meeting of the institute indicated clearly that further progress toward such fundamental uniformity will take place steadily in the future.

Attention is also called to the action of the institute with respect to international statistics of stocks of agricultural products, of exports and imports, and of prices of such products. The United States is almost the only country which has even approximately satisfactory statistics of stocks, and the institute has accordingly urged upon other countries to begin the collection of such statistics. There is a great lack of uniformity and of comparability among the different countries with respect to statistics of exports and imports. The institute accordingly recommends to the governments to consider means of correcting these difficulties, and will shortly submit definite suggestions regarding such means for the consideration of the several governments. The institute proposes as soon as possible to begin the publication of monthly reports on these classes of statistics.

The members of the delegation from the United States wish to express their appreciation of the great service which His Majesty the King of Italy has rendered to the institute throughout its career.

It was at his invitation that the conference was held at Rome in 1905, which resulted in the treaty for the organization of the institute. He has, at his own expense, donated land, conveniently and beautifully situated, and has erected a palatial building for the offices of the institute and for the meetings of its general assembly. He also contributes toward the current operations of the institute by munificent private donations, distinct from the regular contributions of the Italian Government. At the reception tendered by the King of Italy to the delegates to the general assembly he expressed his warm and active interest in the work and success of the institute, and was in turn thanked enthusiastically on behalf of the institute for the support he has given. The members of the American delegation had the honor of a private and informal audience with the King of Italy during their stay in Rome.

The delegation also desires to express its gratification at the courtesy which was shown them, as representatives of the United States, not only by the delegates from other countries, but by the officials of the Italian Government and of the city of Rome. The recognition which was accorded to the members of the delegation enabled them to take an active and effective part in the work of the institute, and they were shown every possible consideration by all with whom they came into personal or official relations.

The members of the delegation can not refrain from calling attention to the great service which has been rendered to this country and to all the countries of the world by the Hon. David Lubin, the permanent delegate of the United States to the Institute of Agriculture. Mr. Lubin was the first to conceive the idea of establishing an International Institute of Agriculture. He devoted years of effort in the face of opposition to awakening an interest in the subject among the nations of the world and bringing about the adoption of the treaty which created the institute. Since the adoption of the treaty he has, as delegate of the United States to the permanent committee of the institute, given practically all of his time without salary to the work of the institute. The delegation found when at Rome that the service which Mr. Lubin has rendered is fully and highly appreciated by the Governments of the various countries represented in the institute and by the delegations of those countries to the institute. It is a matter of congratulation to the people of the United States that this important international movement owes its origin to one of our own citizens.

Whether there could be established an international institute of agriculture which would justify its name and become a vitally helpful agency in the study and solution of agricultural problems the world over, has been a question in the minds of many sincere students of those problems. That such an institute has been established, and that it will grow steadily and rapidly in influence and in practical efficiency, is the profound conviction of all those who attended the last general assembly and studied at first hand the work that has been done, the organization that has been perfected, and the scope of future plans. In the leading countries of Europe, where by reason of proximity to its headquarters the work of the institute is best known, the enthusiasm for it is universal. This is attested by the fact that all of these countries not only maintain a permanent delegate, but were represented at the general assembly by their full quota of delegates, all of whom were men of eminence and influence whose very presence was a testimonial to the success of the institute. One of the delegates from the United States, Mr. Victor H. Olmsted, after the adjournment of the general assembly, was required to travel through certain European countries for the purpose of securing information needed by the Department of Agriculture, and in each of the countries visited he met prominent officials and private citizens who spoke with enthusiasm of the work of the institute. Without exception they seemed deeply impressed with the good work already done and its ultimate great usefulness to every nation adhering to it.

The members of the delegation desire in conclusion to express their conviction that the International Institute of Agriculture is destined not only to serve a most useful purpose with respect to the gathering and diffusion of information regarding agriculture and commerce throughout the world, but to fill a much broader sphere of usefulness. It is one of the most potent instrumentalities for the unification of the world, for the promotion of the general welfare of the peoples of the earth, for the establishment and maintenance of closer friendly relations among the nations, and for the further development of that earnest cooperation, that unity of action, which is rapidly making one mind and one heart for the world. An abundance of good food at prices which afford just remuneration to the producer and are at the same time within the means of the consumer is one of the essentials of a high civilization. To the problem of the production and distribution of the world's food supply the institute is addressing itself. But above and beyond all this the institute is a tremendous force for the improvement of international manners and morals and conduct, and for the maintenance of international peace.

Appended to this report is (1) a list of the delegates to the meeting of the general assembly from all nations; (2) a recapitulation of the reports, debates, and resolutions of the general assembly; and (3) a report by the delegate of the United States to the permanent committee, Hon. David Lubin.

Very respectfully,

David J. Foster.
Chas. F. Scott.
E. Dana Durand.
Victor H. Olmsted.
Edgar R. Champlin.

International Institute of Agriculture.

[Third session, May, 1911.]

NAMES AND POSITIONS OF DELEGATES OF THE ADHERING COUNTRIES TO THE GENERAL ASSEMBLY.

Germany.—His Excellency Dr. Thiel, acting privy councilor; Dr. T. Mueller, acting superior privy councilor, delegate to the permanent committee of the International Institute of Agriculture; Dr. van der Borght, president of the imperial bureau of statistics; Prof. Dade, secretary general of the Council of German Agriculturalists; Baron de Putlitz auf Grosspankow, representative of the German Society of Agriculture; M. de Levetzow auf Sielbeck, representative of the Federation of Agriculturalists; M. Johannsen, councilor on agricultural economy, vice president of the Imperial Federation of German Cooperative Agricultural Societies.

Argentina.—His Excellency M. E. Portela, minister plenipotentiary of the Argentine Republic to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Austria.—Count Franz Attems, chamberlain of His Majesty, provincial deputy, reporter on agriculture to the provincial deputation of Styria; Dr. Ernst Seidler, director general in the imperial ministry of agriculture; Baron Hans de Cnobloch, ministerial section councilor in the imperial ministry of agriculture; Chevalier Victor de Pozzi, councilor in the imperial ministry of agriculture, delegate to the permanent committee of the International Institute of Agriculture.

Hungary.—M. Edmond de Miklos de Miklosvar, secretary of state for agriculture, member of the chamber of magnates, delegate to the permanent committee of the International Institute of Agriculture; M. Laurent de Roth de Pongyelok, ministerial councilor, chief of division in the ministry of agriculture; M. Etienne de Bernat de Korlat, director of the Confederation of Hungarian Agriculturalists; M. Jules de Rubinek de Zeitvabessenyő, director of the National Society of Agriculturalists; M. George de Linhart, royal councilor, formerly professor in the Academy of Agriculture; M. Zvonimir Zepic, township councilor.

Belgium.—M. Proost, director general of the rural office in the ministry of agriculture and public works; M. O. Bolle, delegate to the permanent committee of the International Institute of Agriculture.

Brazil.—Prof. Vincenzo Grossi, consul of Brazil at Rome; Dr. Cortines Laxe, under commissioner of Brazil to the international expositions at Turin and Rome.

Bulgaria.—M. D. Rizoff, minister plenipotentiary of Bulgaria to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Chile.—M. S. Aldunate Bascuñan, minister plenipotentiary of Chile to His Majesty the King of Italy; M. Alejandro Bertrand; M. Enrique Paut-Vergara, consul general of Chile in Italy.

China.—His Excellency M. Ou-Tsong-Lien, minister plenipotentiary of China to His Majesty the King of Italy.

Costa Rica.—M. R. Montealegre, minister plenipotentiary of Costa Rica to His Majesty the King of Italy.

Cuba.—M. C. M. de Cespedes y Quesada, minister plenipotentiary of Cuba to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Denmark.—Baron H. C. O. de Rosenkrantz, grand huntsman of the court; M. H. H. Konow, gentleman of the chamber, secretary of the legation of Denmark to the Government of Italy, delegate to the permanent committee of the International Institute of Agriculture; M. K. Vallôe, secretary in chief in the ministry of agriculture.

Ottoman Empire.—Dr. Mehmed Djémil Bey, delegate to the permanent committee of the International Institute of Agriculture.

Egypt.—M. B. Chimirri, deputy to the Italian Parliament, delegate to the permanent committee of the International Institute of Agriculture.

Equador.—M. A. Norero, minister plenipotentiary of Equador to His Majesty the King of Italy.

Spain.—M. Enrique Trenor y Montesinos, Count of Montornes, chief of the agricultural service of the Province of Valence; M. Ignacio Girona y Villanova, engineer in agronomics; M. Augusto Echeverria y Bardel, engineer in agronomics, councilor of agriculture, delegate of Spain to the permanent committee of the International Institute of Agriculture; M. Leopoldo Salas y Amat, engineer in agronomics, chief of the agricultural section of Malaga.

United States of America.—Hon. David J. Foster, former chairman of the Committee on Foreign Affairs of the House of Representatives; Hon. Charles F. Scott, former chairman of the Committee on Agriculture of the House of Representatives; Mr. Victor H. Olmsted, Chief of the Bureau of Statistics of the Department of Agriculture; Mr. E. Dana Durand, Director of the Census of the United States; Gen. Edgar R. Champlin; Mr. David Lubin, delegate to the permanent committee of the International Institute of Agriculture.

Ethiopia.—Prof. Cuboni, director of the section of vegetable pathology at Rome, delegate to the permanent committee of the International Institute of Agriculture.

France.—M. Daubrèe, councilor of state, director general of waters and forests in the ministry of agriculture; M. Vassiliere, director of agriculture in the ministry of agriculture; M. Dabat, director of hydraulics and of agricultural improvements in the ministry of agriculture; M. Louis-Dop, vice president of the International Institute of Agriculture; M. Decharme, chief of the service of mutual credit and agricultural cooperation in the ministry of agriculture; M. Lesage, chief of the service of technical studies in the office of agricultural information in the ministry of agriculture

Algeria.—M. Lesage, chief of the service of technical studies in the office of agricultural information in the ministry of agriculture of France.

Regency of Tunis.—M. Malet, engineer of agronomics, chef du secretariat of the office of agriculture, commerce, and colonization.

Great Britain and Ireland.—Sir Thomas H. Elliott, K. C. B., permanent secretary in the board of agriculture and fisheries; Mr. T. P. Gill, secretary in the department of agriculture and technical instruction for Ireland; Mr. H. C. Dering, counselor of the Embassy of Great Britain to the Italian Government, delegate to the permanent committee of the International Institute of Agriculture.

Australia.—Mr. H. C. Dering, counselor of the Embassy of Great Britain to the Italian Government, delegate to the permament committee of the International Institute of Agriculture.

Canada.—Hon. Arthur Boyer, senator, delegate to the permanent committee of the International Institute of Agriculture; Mr. T. K. Doherty, chief of the bureau of publications of the department of agriculture, special correspondent of the International Institute of Agriculture.

British India.—Sir Edward Buck, K. C. S. I., delegate to the permanent committee of the International Institute of Agriculture.

New Zealand.—Mr. H. G. Dering, counselor of the embassy of Great Britain to the Italian Government, delegate to the permanent committee of the International Institute of Agriculture.

Mauritius.—Mr. H. G. Dering, counselor of the embassy of Great Britain to the Italian Government, delegate to the permanent committee of the International Institute of Agriculture.

Greece.—M. A. Carapanos, chargé d'affaires of Greece to the Italian Government.

Italy.—Marquis R. Cappelli, president of the International Institute of Agriculture, vice president of the Chamber of Deputies; M. L. Bodio, councilor of state, senator of the Kingdom; M. G. Raineri, former minister of agriculture, industry, and commerce, deputy in Parliament; M. E. Ottavi, deputy in Parliament, president of the Society of Italian Agriculturalists; Dr. V. Magaldi, director general of credit, savings, cooperation, and social insurance in the ministry of agriculture, industry, and commerce; M. L. Luciolli, director of the bureau of customs, treaties, and legislation in the ministry of finance; Prof. Chino Valenti, central commissioner of agricultural statistics in the ministry of agriculture, industry, and commerce; Prof. Palazzo, director of the bureau of meteorology and of geodynamics in the ministry of agriculture, industry, and commerce.

Erithrea and Italian Somaliland.—M. B. Chimirri, deputy in the Italian Parliament, delegate to the permanent committee of the International Institute of Agriculture; Baron G. Sonnino, Senator of the Kingdom of Italy.

Japan.—M. Tozaburò Tsukida, expert in the ministry of agriculture and commerce; M. Naotoshi Marumo, first secretary of the Embassy of Japan to the Government of Italy.

Mexico.—M. Attilie Boschi-Huber, consul of Mexico at Rome.

Montenegro.—M. E. Popovitch, consul general of Montenegro at Rome; M. G. Volpi, director general of the tobacco monopoly of Montenegro, delegate to the permanent committee of the International Institute of Agriculture.

Nicaragua.—M. V. E. Bianchi, consul general of Nicaragua at Rome, delegate to the permanent committee of the International Institute of Agriculture.

Norway.—M. Thor Von Ditten, minister plenipotentiary of Norway to His Majesty the King of Italy; M. A. Fjelstad, delegate to the permanent committee of the International Institute of Agriculture.

Netherlands.—M. H. Jonkeer Van Weede, minister plenipotentiary of the Netherlands to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Peru.—Dr. M. M. Mesones, delegate to the permanent committee of the International Institute of Agriculture.

Persia.—M. A. del Gallo, Marquis de Roccagiovine, delegate to the permanent committee of the International Institute of Agriculture.

Portugal.—M. Luiz Filippe de Castro, professor in the Institute of Agronomy at Lisbon, delegate to the permanent committee of the International Institute of Agriculture; M. Lambertini Pinto.

Roumania.—M. G. C. Nano, minister plenipotentiary of Roumania to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Russia.—His Excellency M. A. Yermoloff, secretary of state, privy councilor, member of the council of the Empire; His Excellency Prof. P. Broounoff, councilor of state, director of the bureau of meteorology, member of the scientific committee of the general direction of agrarian organization and of agriculture; His Excellency M. G. Zabiello, councilor of state, consul general of Russia at Rome, delegate to the permanent committee of the International Institute of Agriculture; M. A. Jaczevsky, member of the scientific committee of the general direction of agrarian organization and of agriculture.

San Marino.—His Excellency Prof. L. Luzzatti, minister of state of the Kingdom of Italy, delegate to the permanent committee of the International Institute of Agriculture.

Servia.—M. Voultch, minister plenipotentiary of Servia to His Majesty the King of Italy.

Sweden.—Baron C. N. D. de Bildt, minister plenipotentiary of Sweden to His Majesty the King of Italy; Prof. H. J. B. Juhlin-Dannfelt, secretary of the Royal Academy of Agriculture at Stockholm.

Switzerland.—Dr. Jean-Baptiste Pioda, minister plenipotentiary of Switzerland to His Majesty the King of Italy, delegate to the permanent committee of the International Institute of Agriculture; Prof. Ernest Laur, president of the Swiss Peasants' Confederation at Brougg.

Uruguay.—M. Enrique J. Rovira, vice consul of Uruguay at Rome.

RECAPITULATION OF THE REPORTS, DEBATES, AND RESOLUTIONS OF THE THIRD GENERAL ASSEMBLY.

At the opening meeting of the general assembly, on May 14, His Excellency Hon. Giovanni Raineri, delegate of Italy, was elected president of the assembly, and His Excellency Baron De Bildt, delegate of Sweden, and Mr. David J. Foster, delegate of the United States, were chosen as vice presidents.

In the temporary absence of Mr. Raineri, Baron De Bildt was called to the chair.

The meeting then proceeded to constitute, among its members, four commissions, or committees, to deal with the several questions before the assembly, as follows:

Commission I.—*Administration and finance.*

To this commission were submitted the following reports from the permanent committee of the institute: Report by the president of the institute, Marquis Cappelli, on the present situation of the institute and its work during the past 18 months; report by M. Zabiello, delegate of Russia, on the financial situation and the budget for 1911 and 1912; report by M. O. Bolle, delegate of Belgium, on the desirability of appointing foreign correspondents to report to the institute on scientific and technical questions affecting agriculture in their respective countries.

Commission II.—*General statistics.*

This commission had to consider the following reports from the permanent committee: Report of Dr. Mueller, delegate of Germany, on the crop-reporting service and the measures to be taken to extend and improve it; also the report by M. Zaviello, delegate of Russia, on commercial statistics, stocks, exports, imports, and prices.

Commission III.—*Agricultural intelligence and diseases of plants.*

To this commission were submitted, on behalf of the permanent committee, a report by Prof. Cuboni, delegate of Ethiopia, on an international understanding for fighting the more important diseases of plants, such as the rust of cereals, and on the desirability of international measures for the suppression of the noxious weed, dodder; report by M. Louis-Dop, delegate of France, on agricultural meteorology; report by M. De Miklos, delegate of Hungary, on dry farming; report by M. De Miklos, on the protection of useful birds.

Commission IV.—*Agricultural cooperation, insurance, and credit.*

This commission considered the report by M. Bolle, delegate of Belgium, on insurance against hail; also the report by M. De Pozzi, delegate of Austria, on the statistics of cooperation.

The president then called on the spokesman of the delegation of each country to state on which commission such delegation wished its various members to sit.

Mr. Foster, as chairman of the American delegation, made the following announcement as to the distribution of the members of the American delegation:

Commission I.—Mr. Foster, Mr. Olmsted, Mr. Durand.

Commission II.—Mr. Olmsted, Mr. Durand, Mr. Lubin.

Commission III.—Mr. Scott, Mr. Champlin.

Commission IV.—Mr. Scott, Mr. Champlin, Mr. Lubin.

Each commission then proceeded to elect a president, vice president, and reporter, as follows:

Commission I.—President, Sir Thomas Elliott, delegate of Great Britain; vice president, Hon. Laurent De Roth de Pongyelok, delegate of Hungary; reporter, Baron Hans De Knobloch, delegate of Austria.

Commission II.—President, His Excellency Dr. Thiel, delegate of Germany; vice president, Mr. Victor H. Olmsted, delegate of the United States; reporter, M. Lesage, delegate of France.

Commission III.—President, M. Dabat, delegate of France; vice president, M. S. Aldunate Bascunan, delegate of Chile; reporters, M. Malet, delegate of Tunis, and M. De Miklos, delegate of Hungary.

Commission IV.—President, M. Chimirri, delegate of Erithrea and Italian Somaliland; vice president, M. Girona y Villanova, delegate of Spain; reporter, M. Decharme, delegate of France.

The meeting then adjourned.

On Sunday afternoon the American delegation met in the American room at the institute; Mr. Foster, Mr. Durand, Mr. Olmsted, Mr. Champlin, and Mr. Lubin were present. The meeting was called to order at 3.30. Mr. Foster was elected chairman and Mr. Lubin secretary of the delegation. A preliminary discussion was had on the merits of the various methods for reporting the condition of growing crops, submitted to the assembly for its choice, and a tentative line of policy was adopted on this head.

The meeting adjourned at 4 p. m.

At 5 p. m. a reception was given in the institute building to all the members of the delegations to the general assembly. Their Majesties the King and Queen of Italy were present and the members of the American delegation were presented to them by the permanent delegate, Mr. Lubin.

On Monday morning the American delegation met in the American room of the institute. The work to come up before the several commissions was briefly passed in review. Mr. Lubin pointed out that an important question to come before the first commission would be that of the languages in which the publications of the institute should appear. According to the by-laws, French is the official language of the institute, but Mr. Lubin stated that, as delegate to the permanent committee, he had insisted on the need of English editions of the publications and had succeeded in obtaining them. He said further that objections were raised by the delegates of other nations, who demanded like privileges, but that the permanent committee had decided to continue the English editions for the time being and to submit the matter to the general assembly to decide on some means by which the adhering countries, interested in having editions in their own languages, could contribute toward their fair share of the extra cost of translation and printing.

The delegation accordingly decided to advocate some such plan with the end of obtaining several thousand copies of each edition for the United States, to be distributed by the Government.

The work to come before the second commission was then reviewed. It was pointed out that the one point of prime importance for the institute, on which there promised to be a decided divergency of opinion between the delegations from the different countries, was the selection of a uniform method for transposing the original data on the condition of the growing crops from the different countries, so as to enable the institute to arrange comparable and uniform data in tables and calculate therefrom a summary on a percentage basis in the form of the "single numerical statement" for the world.

After discussion, the delegation decided that its policy should be to favor plan A, as outlined by the permanent committee, which is a plan similar to that now employed by the United States, and which provides for expressing the condition of the growing crops as a percentage of a condition, which, if no unusual change takes place, promises a yield per unit of area equal to the average yield for the past 10 years.

The general assembly convened at 12 o'clock Monday to install the president-elect, His Excellency Hon. Giovanni Raineri.

President Raineri, after welcoming the delegates from the adhering governments, congratulated the institute on the work it had accomplished since the last general assembly, and said he was happy to inform the assembly that the International Agricultural Congress, at its meeting at Madrid, from which he had just returned, had decided to forward its resolutions to the International Institute of Agriculture, so that the permanent committee may study them with a view to taking steps with the adhering governments for having such of them as came within its province carried into effect. He felt sure the assembly would appreciate this mark of confidence on the part of the agricultural world.

The meeting then adjourned to give time for the four commissions to consider and report on the various items of the program assigned to them.

On Friday, May 19, and Saturday, May 20, meetings of the general assembly were held, at which the reports and recommendations of the four commissions were received and considered and various resolutions adopted, in general following closely the recommendations of the commission. The business thus transacted by the commissions and the general assembly was divided under the following heads:

1. Review of the past work of the institute; administrative matters.
2. Status and development of the agricultural, statistical, and crop-reporting work of the institute.
3. The future work of the institute with regard to the statistics of visible and invisible stocks, exports, imports, and prices.
4. Diseases of plants.
5. Protection of birds.
6. Dry farming.
7. Agricultural meteorology.
8. Insurance against damage by hail.
9. Statistics of agricultural cooperation.
10. Finance.
11. Miscellaneous.

It will be convenient to deal with these matters under their separate heads:

1. Review of the Past Work of the Institute.

A comprehensive report on the work accomplished by the institute during the 18 months which have elapsed since the meeting of the last general assembly was submitted on behalf of the permanent committee by the president of the institute, Marquis Cappelli. After describing the progress made with the different branches of work, the president recommended some minor modifications in the by-laws of the institute which experience showed were necessary for its successful development. These were subsequently adopted by the assembly on the recommendation of the first commission, and were as follows:

1*a*. BY-LAWS OF THE INSTITUTE.

"The following is the text of articles 15 and 19 of the by-laws of the institute, as adopted by the general assembly:

"Art. 15. The president of the permanent committee is the president of the institute. He, and in his absence the vice president, represents the institute and fulfills all the functions and accomplishes all the acts consequent on its corporate capacity. He signs orders for payment and official documents addressed to the governments and the delegates.

"He has the general supervision of all the work of the institute and controls the execution of the decisions taken by the permanent committee.

"Art. 16. The general administration of the International Institute of Agriculture comprises the following services:

"(1) Bureau of the secretary general.

"(2) Bureau of general statistics.

"(3) Bureau of agricultural intelligence and diseases of plants.

"(4) Bureau of economic and social institutions.

"Art. 18 (A). The bureau of general statistics attends to the following matters:

"Agricultural statistics; collection, centralization, and publication of agricultural information and statistics on animal and vegetable production, and the trade, distribution, and consumption of agricultural produce; ruling prices and stocks of agricultural produce; general and special market price lists for agricultural produce; markets, fairs, etc.; interpretation and comparison of diverse statistics; centralization of fiscal and customhouse statistics on agricultural products; imports, exports; daily, weekly, monthly agricultural statistics; general statistics; special, periodical, and nonperiodical statistics; statistical commissions in all countries, etc.

"(B) The bureau of agricultural intelligence and diseases of plants attends to the following matters:

"1. Agricultural intelligence: Collection, centralization, and publication of practical information on animal and vegetable production; inquiries and studies on animal and vegetable products; centralization and summarizing of diverse periodical information on the agricultural situation in all countries.

"2. Diseases of plants: Extent and intensity of diseases; remedies; injurious cryptogams; entomology.

"Art. 19. The bureau of economic and social institutions attends to the following matters:

"Wages of rural labor; statistics and information concerning the organization of agricultural cooperation, insurance, and credit."

Looking into the future the president's report pointed out that it is essential for the institute's publications to appear in the principal languages in order that the information may obtain world-wide circulation. This opinion was fully shared by the first commission, which had the president's report under consideration. The views expressed by the American delegation, that the United States Government should pay its fair share of the cost of translation and printing of an English edition for circulation in the United States, met with the warm approval of that commission and of the assembly. Other countries, notably Germany and Austria, for a German edition, and Brazil for a Portuguese edition, expressed their intention of proposing similar plans to their Governments. It was informally agreed by the general assembly that for the remainder of this year the institute would continue to publish the English edition of the bulletins, as heretofore, so as to give time for arrangements to be made with the Governments along the lines proposed.

The date for the next meeting of the general assembly was fixed for the spring of 1913.

2. Agricultural Statistics and Crop Reporting.

This was perhaps the most important subject before the assembly. The discussions in the second commission and in the assembly were based on the report submitted on behalf of the permanent committee by Dr. Mueller, permanent delegate of Germany.

The report of Dr. Mueller stated that as a result of the decisions taken by the general assembly in December, 1909, the Governments of Brazil, China, Costa Rica, Ecuador, Eritrea and Italian Somaliland, Greece, and Mexico have informed the institute that they are taking steps to organize an agricultural statistical service which will be able to supply the information required for the institute's service. Twelve countries—Argentina, Belgium, Chile, Denmark, Tunis, Australia, New Zealand, Japan, Hungary, Norway, Roumania, and Switzerland—which prior to 1910 never published numerical reports on the condition of their growing crops, adopted in 1910 the system proposed by the institute and send in their reports regularly. Five countries—Bulgaria, the United States, Luxemburg, Holland, and Sweden—while continuing to report their crop conditions in accordance with the systems they were already using, transpose their original data in accordance with the plan adopted by the institute. Germany, Austria, Belgium, Canada, the Ottoman Empire, and Italy have announced that they are making alterations in their statistical services so as to comply with the requirements of the institute.

The report of Dr. Mueller pointed out that if the official control which the institute's crop-reporting information is to exercise over the reports circulated by irresponsible private agencies is to be effective, the Governments must still further improve their national crop-reporting services, so as to supply the institute with regular, rapid, and reliable reports on the condition of growing crops and harvest yields in each of the adhering countries.

Reference was then made in the report to differences of opinion which have arisen as to the right interpretation of the decisions of the last general assembly on the method of reporting on the condition of growing crops. The French Government objected to having its original reports on crop conditions transposed into a probable percentage of yield. It claimed that its reports are purely descriptive of the condition of the crops at the time of report and have no reference whatsoever to the probable yield. In view of these difficulties the report expressed the opinion that an international crop-reporting system can only be perfected when crop conditions and yields are reported by the several countries on a uniform plan. As a step toward attaining this basic uniformity, it proposed that a study of the question be made by the permanent committee. This study should be submitted by the Governments to their statistical experts and returned with comments to form the subject of proposals to the next general assembly. Pending the adoption of such uniform methods, the report called on the assembly to select for current use one of three systems, designated as A, B, and C, for transposing the original reports on crop conditions as forwarded by the Governments.

The report proposed that the regular statistical-information service of the institute be extended to vineyards, silk, sugar, tobacco, and flax, for which staples a large number of the adhering Governments supply statistical data in a measure to permit of starting such a service. Other staples will be included in the service gradually as the Governments place themselves in a position to supply the necessary information.

Finally, the report placed before the assembly a proposal for the publication by the institute of an international yearbook of comparative agricultural statistics.

The debates in the second commission, with respect to the recommendations of the permanent committee, as presented in the report of Dr. Mueller, bore chiefly upon the proper method for reporting crop conditions. The three alternatives proposed by the permanent committee, as a tentative basis for the current crop reports of the institute, were as follows:

A. The original reports shall be transformed into percentages of a condition, which, provided no extraordinary phenomenon takes place thereafter, promises for each unit of area a yield equal to the average yield of the last 10 years.

B. The original returns shall be transformed into "notes of classification." The "notes of classification" employed for this transformation shall be as follows: 150 to indicate an excellent crop condition, 125 to indicate a good crop condition, 100 to indicate an average crop condition, 75 to indicate a poor crop condition, 50 to indicate a very bad crop condition.

C. The transformation shall be effected by comparing the condition of the crop at a given date with the average of the conditions of the same crop at the same date for the 10 preceding years.

Inasmuch as plans A and C are quite similar, the principal point of discussion in the commission was as between these plans on the one hand and plan B on the other. It was urged as an objection to plan A that it involved an attempt to forecast the crop one or more months in advance of harvest, and that it was impossible to make such a forecast with accuracy because of possible changes which might arise thereafter. It was argued that if, for example, in May the Government announced officially that the condition of a given crop promised a yield equal, say, to the average, or 100 per cent, and if afterwards untoward circumstances reduced the actual yield to much less than the average, the public would criticize the Government and injury would be done in the markets through reliance upon this incorrect forecast.

The members of the American delegation took an active part in the discussion in defense of plan A as against plan B, and the delegates of various other countries argued strongly in the same direction. It was pointed out that any form of expression concerning the condition of the crops at a given date during their growth was bound to be considered by the public in its bearing upon the probable harvest; that in fact there would be no use whatever in collecting reports regarding crop conditions during their growth were it not for the significance of those conditions in relation to the probable harvest; that everyone knew that unforeseen events might occur and that the report of the condition of the crops on a given date was always understood to be subject to that possibility, and that it served only to give information as to what the crop would probably be if no such unusual event should occur.

Finally it was urged that the only system by which the reports of all countries could be brought together and averaged was a system of definite percentages based upon an average crop or some other standard, such as a normal or excellent crop; that the "notes of classification" proposed under plan B were merely equivalent to words describing the condition of the crop; that such words would necessarily have different meanings in different countries, "excellent," for example, in one country being a much higher percentage above average than in another country, so that an average based on them would have no definite significance; and that, moreover, different persons would interpret these "notes of classification" in different ways, so that speculators would thus have free scope for misleading the public should they so desire.

After prolonged discussion a vote was taken in the second commission, in which 14 countries were in favor of the adoption of plan A and 3 in favor of plan B. The reporter for the commission, M. Lesage, delegate of France, summarized the debates in a report to the general assembly and set forth the conclusions of the second commission on this and other less important points. The general assembly, with some little modification, adopted with practical unanimity the resolutions recommended by the commission. They are in full as follows:

REGULAR INFORMATION SERVICE FOR THE SEVEN PRODUCTS—WHEAT, RYE, BARLEY, OATS, CORN, RICE, AND COTTON.

1. The general assembly is of opinion that it is absolutely essential, for national and international interests, that each of the countries belonging to the institute possess an agricultural statistical service. In those countries in which such a service does not yet exist, or where it is not so organized as to correspond to the requirements of an international crop-reporting service, the requisite organization should be taken in hand as rapidly as possible.

The general assembly instructs the permanent committee to take the requisite steps with the adhering Governments for the establishment or reorganization of an agricultural statistical service in their countries, so as to give complete satisfaction to the wishes expressed on this head by the International Institute of Agriculture.

2. The general assembly resolves that the institute's crop-reporting service on the production of wheat, rye, barley, oats, corn, rice, and cotton shall continue.

3. The general assembly confirms its decision of 1909, which declared that the agricultural statistical services of the adhering countries ought to supply, as a minimum of data for a regular international crop-reporting service, the following:

(a) Periodical statement of the total area and its distribution amongst the principal categories of cultivation.

(b) Annual statement of areas sown and planted to the above-mentioned staples.

(c) Statements of areas sown and of the conditions under which sowing has taken place at the different periods of the year (rain, drought, frost, etc.).

(d) Regular monthly reports on condition of the growing crops and communication of these reports at the same date from all the adhering countries. At the same time with these should be sent reports on meteorological phenomena and events, such as diseases of plants, invasions of insect pests, etc., affecting the condition of the growing crops.

(e) Approximate estimate of probable harvest yield, to be made in relative or actual figures or expressed as a percentage of an average yield, to be made about one month before the harvest is well under way, and at the same time a report on the condition of the growing crops for the same month.

(f) Preliminary statement of actual harvest yield to be made as soon as possible.

(g) Final statement of harvest yield to be made as soon as possible after the harvest is completed, and, when necessary, for the different sections of the country.

4. As difficulties have arisen in interpreting the text of No. 3, paragraph 2, of the decisions of the general assembly in 1909, and in the application of a uniform system for transposing the reports on condition of growing crops, the general assembly decides to replace No. 3, paragraph 2, by the following:

The necessary crop-reporting data which are to be regularly transmitted to the institute are:

(a) *Concerning reports on areas.*—The areas sown during the winter and those sown during the spring to be reported in actual figures and as a percentage of the area sown the previous year. The areas to be harvested shall be reported in actual figures. Final statement of areas which have been harvested.

(b) *Concerning the reports on the condition of the growing crops.*—I. The original data to be forwarded to the institute in the form in which they are reported in each country.

The institute will always publish such original data in a special table. When, however, these data are given in figures calculated separately for the several regions or provinces of a country, the institute will come to an understanding with the Government of that country with a view to expressing the condition of the growing crops of the entire country as a single numerical statement.

II. Until such time as the adhering countries shall have adopted a uniform system for reporting on the condition of growing crops, the Governments which use figures to express such conditions are requested to transmit to the institute, along with the original data, the results of a transposition of such data as indicated under No. 7.

(c) *Concerning the approximate estimate of probable yield.*[1]—A figure is to be transmitted to the institute, along with the report on the condition of the growing crops (original data and transposed), stating either the probable yield per hectare, or the probable total yield of a given crop, or the probable yield expressed as a percentage of the average yield for the past 10 years.

(d) *Concerning the preliminary and final statement of actual harvest yields.*—A figure is to be transmitted to the institute representing either the average yield obtained per hectare, or the total actual yield of a given crop.

5. The assembly expresses the wish that the reports on the condition of the crops be made in each country so as to reach the institute before the 15th of the month, and be published at latest on the 20th of the same month.

It is of the utmost importance that the data on areas sown and the preliminary and final statements of actual harvest yields be communicated to the institute as soon as possible after they have been ascertained.

The institute should publish, as far as possible, week by week all data supplied by the Governments which they may send in before the above-mentioned dates.

6. The general assembly considers that an international crop-reporting service can only have commercial value when the national systems of reporting on the area, condition, development, and yields of the crops are based on uniform principles. It therefore calls on the permanent committee to submit to the Governments a state-

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[1] That to be made one month before harvest.

ment of the reasons for such uniformity and a scheme of organization to meet the ends in view.

The general assembly requests the adhering Governments to submit this statement to their experts, whose comments should be communicated to the institute for insertion in a report. This report will form the basis for a discussion on the question of "the unification of the national systems of reporting on the areas, condition, development, and yield of the crops." Said subject to be placed on the program of the next general assembly.

The general assembly instructs the permanent committee to request the International Statistical Institute to study this question at its next session and to communicate to the institute the results of its deliberations.

7. In the meantime, and after receiving once for all the preliminary authorization of the respective Governments, the institute will transpose the original data on crop conditions during the three months preceding the harvest into a percentage of a condition which, if no unusual phenomena occur, promises for each unit of area a yield equal to the average yield for the past 10 years.

For those countries which do not yet possess a 10 years' average, the basis for the calculation will be the average for as many years as are covered by the statistics existing in that country for the crop under consideration.

REGULAR INFORMATION SERVICE FOR OTHER STAPLES.

8. The general assembly, after examining the study made by the statistical bureau of the institute on the subject of silk (mulberries, cocoons, silk); sugar (sugar beets and sugar cane, sugar); vineyards (grapes, must, wine, spirits of wine); tobacco; olives and olive oil; hay; flax (linseed and linseed oil); and almonds, is of opinion that a monthly information service can only be extended at present to the following staples: Vineyards (grapes, must, wine); silk (mulberries, cocoons, silk); tobacco; sugar (sugar beets and sugar cane, sugar); flax (textile and seed); coffee.

As in most countries the crop-reporting service is at the present time inadequately organized and developed, even for the above-mentioned staples, the general assembly calls on the Governments to perfect the system for getting out such statistics so that reports on the condition of the growing crops, estimates of probable yield, preliminary and final statements of actual yield, may be made to the institute in due form and regularly at stated periods.

With reference to the statistics on vineyards and wine, the general assembly is of opinion that such statistics should include as a minimum—

(*a*) An annual report, or a report made at least once every 5 years, on the area planted to vines;

(*b*) A report on the condition of the vines in the first period of their vegetation (when flowering is over);

(*c*) A report on the condition of vines about 15 days before the vintage;

(*d*) An estimate of yield (must) as soon as possible after the vintage;

(*e*) Final statement of yield (wine) as soon as possible.

Governments which report on the condition of vineyards in their monthly reports on crop conditions will not be required to forward to the institute the special report provided for under paragraphs (*b*) and (*c*).

9. The general assembly instructs the permanent committee to submit to the Governments the result of the studies undertaken by the statistical bureau of the institute on other staples. It proposes to extend the information service to these staples as soon as the official statistical data collected by the adhering countries allow.

As a temporary measure the institute bulletin will print under a special heading statistical information which the adhering Governments may forward on any staple not yet regularly dealt with by the institute's crop-reporting service.

THE INVENTORY AND AGRICULTURAL STATISTICAL YEARBOOK.

10. The general assembly, after examining the work undertaken by the bureau of statistics in connection with the world's statistical inventory of agricultural production, resolves:

(1) That the inventory be kept up to date by the statistical bureau of the institute for its own use.

(2) That the yearbook of comparative international agricultural statistics be prepared in conformity with the program outlined by the reporter and be published regularly in the last quarter of each year. This yearbook shall include, as far as possible, the original data contained in the returns for the previous year.

3. STATISTICS OF STOCKS, EXPORTS AND IMPORTS, AND PRICES.

The views and recommendations of the permanent committee on the proposed future work of the institute were submitted to the assembly in a report by M. G. Zabiello, permanent delegate of Russia, accompanied by a volume of supplementary studies prepared by the statistical bureau of the institute.

Attention was called in this report to the importance of official inquiries into the amount of invisible stocks, i. e., stocks held over from the previous harvest still in farmers' hands. Such inquiries have been made for some years past by the Governments of the United States and Canada; and last year the semiofficial German Council of Agriculture (Landwirtschafterst) made a report on invisible stocks for the German Empire. The report urged the need of such inquiries in all the large producing countries, as stocks in farmers' hands are an important factor in price formation. The importance of good statistics on visible stocks was also dealt with. The resolutions on this subject suggested in the report were approved by the second commission and by the general assembly (see p. 17).

On the subject of statistics of exports and imports, M. Zabiello's report stated, in brief:

The general assembly in 1909 instructed the permanent committee to have a thorough study made of the statistics of exports and imports. The object was to ascertain the reasons for the vast discrepancies which exist between the figures for exports to certain countries, as given by the exporting countries, and those registered as entered by the importing countries. These discrepancies are due mainly to the deflection of cargoes during transit, and to the registration of imports and exports under different classifications in the different customs administrations. The desirability of improving such statistics has formed the subject of resolutions passed by statistical and other congresses for years past, but so far no effective step has ever been taken in this direction. The report stated that the studies on this subject which the institute has undertaken are not yet completed, and asked the authorization of the assembly to have them carried on and completed for wheat only.

The discussion in the second commission on the subject of exports and imports centered mainly round a proposal brought in by M. Louis Dop, delegate of France, and supported in an amended form by M. Luccioli, delegate of Italy, as a means of obtaining correct statistics of the point of origin and of destination of agricultural products in international trade. The idea underlying the French delegate's proposal is to do for shipments of merchandise what is done for the purpose of establishing correct statistics of passenger traffic on international railways, by means of railway tickets, which are delivered up by the passenger at his final destination and returned by the authorities there to the administration of the railway whence the passenger started. A waybill could be issued by the administration of the customhouse whence the goods started and delivered to the customhouse where the goods are discharged, which should then return to the point of origin.

Fears were expressed in the discussion that such a system might be impracticable, as it might impose extra and undesirable formalities on commerce, and as it is almost impossible to determine the final destination of a cargo. Some speakers expressed the opinion that it was not of any interest to the producer to know the final destination of his produce. This was controverted; the American delegates, amongst others, pointed out that it would be of considerable interest to the United States to be able to determine the ultimate destination of its agricultural exports. The unanimous sense of the commission was that the proposal made by the delegate of France was deserving of consideration and study.

The proposal in the report submitted by M. Zabiello that the institute complete its crop-statistics service by publishing, in 1912, a weekly price bulletin, giving the current price quotations for the principal world market centers, met with the unanimous approval of the second commission and the general assembly. In accordance with the amendment proposed by M. Louis Dop, delegate of France, the "single numerical statement" for the world's supply will be placed alongside of these price quotations.

The resolutions regarding statistics of stocks, international trade, and prices, arrived at by the assembly, after considering the report of the second commission, were as follows:

"1. As it is necessary that the institute complete the studies it has begun before starting a regular public information service on trade statistics, this service will only be begun from July 1, 1912. But for experimental purposes the institute shall begin a monthly information service on trade statistics in the form of a bulletin, not intended for the public, which shall be reserved for the use of the adhering Governments and the members of the permanent committee and subjected to their criticism during this preparatory stage. This experimental service shall begin at a date to be fixed later on by the permanent committee. It will comprise statistical data on visible stocks, imports, and exports, and the weekly price quotations on the principal market centers as supplied by the bourses. The data on stocks will only be given for wheat, rye, barley, oats, and corn; those on exports, imports, and prices for these five staples and for rice and cotton.

"2. The permanent committee is instructed to complete the detailed study of statistics on visible stocks, floating cargoes, and exports and imports, so as to submit to the next general assembly proposals for the improvement and unification of statistical information on these subjects. These studies shall be made for wheat only, and they should examine whether it be desirable and possible to adopt a method of controlling the returns of exports and imports and floating cargoes by accompanying each cargo by a waybill issued by the customhouse from which the goods start and withdrawn by the first customhouse at which the goods are delivered.

"The permanent committee shall make a special study of the organization of the principal international markets and their commercial usages.

"3. The general assembly recommends the Governments adhering to the institute to perfect their services of information on visible stocks and to consider the proposal of starting a monthly service on the subject if they do not yet possess one. This service should at least deal with the five following staples: Wheat, rye, barley, oats, and corn.

"4. The assembly further invites the Governments to study the possibility of making a report on invisible stocks, in farmers' hands, for the five staples above mentioned once a year, preferably at the same date as the first numerical estimate of the probable yield of the growing crops, namely, one month before harvest. The Governments are requested to send the result of these inquiries to the institute, which will only publish same after receiving express authorization from the Governments.

"5. The permanent committee is instructed to draw up a special report on the proposal of reducing to uniform principles customhouse statistics as far as the definition of "special trade" and goods in transit is concerned; also on the classification of imports according to their country of origin, and exports according to the country of destination. This report will be presented to the adhering Governments to be submitted by them to experts on this subject whose observations will be communicated to the institute and form the basis of a report on this question to be brought before the next general assembly."

4. DISEASES OF PLANTS.

The proposals on this head, submitted by the permanent committee to the assembly in a report by Prof. Cuboni, delegate of Ethiopia, were referred to the third commission. The general assembly in 1909 instructed the permanent committee to prepare, on the basis of information supplied by the adhering Governments, a report on the present organization of service on plant diseases in the several countries. This report has been prepared by the institute's section on diseases of plants and contains the information for the following 22 countries: Germany, Belgium, Bulgaria, Chile, Denmark, Spain, France, Tunis, Great Britain and Ireland, Australia, Canada, British India, Mauritius, Italy, Luxemburg, Mexico, Holland, Roumania, Russia, Sweden, Switzerland, and Uruguay. The United States have announced that they are forwarding a complete report on the service as organized in America. Reports also came in from Brazil, Hungary, Nigeria, and New Zealand, and a supplementary report from the Russian Government on the special entomological service organized in that country. This material, however, came to hand too late to be included in the published volume, which was therefore circulated in the form of proofs, to be completed by the institute as the material is received. China, Costa Rica, Egypt, Erithrea, and Peru informed the institute that such a service is now under consideration by those Governments and will soon be established. The following countries have not yet replied to the institute's inquiries on this head: Argentina, Austria, Cuba, Turkey, Ecuador, Ethiopia, Algeria, Greece, Italian Somaliland, Japan, Montenegro, Nicaragua, Norway, Persia, Portugal, Salvador, San Marino, and Servia.

The report stated that this work shows that while in some countries admirably organized services on diseases of plants exist, in others the organization is entirely rudimentary. In view of this fact, and of the great interest that all countries have in securing effective international protection against the invasion and spread of diseases of plant and insect pests, the permanent committee proposed that the institute invite the adhering Governments to appoint an international technical commission, composed of eminent specialists from the adhering countries. This commission should draw up a program for an international understanding and common action on questions of plant pathology. The proposals of the permanent committee on this head were unanimously approved by the third commission.

The permanent committee also proposed that the assembly recommend to the adhering Governments to take specific steps for the international control of the trade in forage seeds and for the destruction of dodder. On this point, however, the third commission considered that action would be premature, as the destruction of dodder is only one of the many points which should properly come up for discussion before the proposed international commission. It was therefore decided to suppress that portion of the proposals.

The third commission elected M. A. Jaczevsky, delegate of Russia, as reporter to the general assembly on the question of plant diseases, and the proposals of the commission as presented by him were unanimously adopted by the general assembly, as follows:

"1. The general assembly instructs the permanent committee of the International Institute of Agriculture to draw up a report calling the attention of the adhering Governments to the need of appointing an international commission on vegetable pathology, to draw up a program, and, if possible, to come to an understanding on international measures for the control of plant diseases.

"2. The general assembly request the adhering Governments to instruct their experiment stations to communicate without delay to the institute the result of their experiments, especially those dealing with the efficiency of the remedies against plant diseases, in order that these reports may be published in the institute's Bulletin on Diseases of Plants."

5. PROTECTION OF BIRDS.

In accordance with the instructions given by the general assembly in 1909, the permanent committee submitted a report on the legislative measures enacted in the several countries for the protection of useful birds, the reporter for the committee being M. De Miklos de Miklosvar, permanent delegate of Hungary.

The following resolutions on this head were passed by the assembly, on the recommendation of the permanent committee and of the third commission:

"1. The general assembly takes note that 20 Governments have enacted effective legislation for the protection of useful birds, and is gratified to note that 3 Governments have taken steps in this direction as a result of the decision of the general assembly of the International Institute of Agriculture in 1909.

"2. In view of the importance to farmers of such protection, the general assembly decides to communicate the data collected on this subject to the adhering Governments, with the request that they complete such protection, and in the case of countries where such protection is not enacted that the necessary steps be taken to establish it with a view to universal cooperation for the protection of useful birds.

"3. The general assembly deems it desirable to follow developments under this head and instructs the permanent committee to keep in touch with the several Governments, and to inform the next general assembly of the progress made in this direction."

6. DRY FARMING.

A report on this question (see annex 13) was submitted on behalf of the permanent committee by M. De Miklos De Miklosvar, and referred for study to the third commission.

The debate in that commission showed that some doubt had been expressed by a minority in the permanent committee as to the fitness of bringing up such a technical problem as dry farming before the general assembly. The sense of the commission, as expressed by the delegations of the United States, Hungary, France, and Tunis, and afterwards unanimously indorsed by the assembly, was that the institute fulfilled one of its functions in taking up this matter, since the institute is intended to act as a clearance house for the exchange of information between the adhering nations on such important problems. It was shown that over 90 per cent of the countries represented in the institute are directly or indirectly interested in the solution of the problems connected with dry farming. It was decided that the report should be forwarded to the adhering governments and their attention especially called to the importance of the questions it raises, and the following resolutions were unanimously adopted:

"1. The general assembly decides that the adhering governments be invited to make experiments in dry farming, in accordance with the method advocated by Mr. Campbell, as adapted to local requirements.

"2. That the adhering governments be asked to communicate every year the results of their comparative experiments to the institute, so that the institute may collect them and inform the agricultural world on the efficacy of this method of tilling the soil, and on the value of the several varieties of plants, rotation of crops, and different fertilizers as deduced from the practical results obtained in the different countries."

7. Agricultural Meteorology.

In the report submitted on behalf of the permanent committee on the crop-reporting service by Dr. Mueller, permanent delegate of Germany, the following statement is made:

"Last year the general assembly decided that the adhering States be called upon to communicate information of natural phenomenon and events, diseases of plants, and invasion of insect pests which affect the condition of the crop. But information of this description has been very meager, and what has come to hand has been very incomplete. This is clearly a most regretable deficiency, for private news dealing with these events affects the bourses often to a quite unjustifiable extent. By generalizing such information the importance or extent of the damage done is almost always exaggerated. The only remedy is to be found in official information based on special inquiries. But these inquiries can not be made in a haphazard manner. For this purpose a well-organized service of information and inspection is required, which unfortunately does not yet exist in many countries. The institute proposes to make efforts to induce the Government to organize such services, and proposals will be submitted to the general assembly for the organization of an international meteorological service for the purposes of agriculture and also for an international service for the observation of plant diseases and invasions of insect pests. These services will be able to cooperate with the crop-reporting service already organized with a view to exercising an effective control over all private information of a nature to influence the market for agricultural staples."

The decision taken by the assembly toward bringing about international action in the matter of diseases of plants and insect pests has already been stated; similar action was taken in favor of an international service of agricultural meteorology. The report for the permanent committee, made by M. Louis Dop, permanent delegate of France, sets forth the advantages which could be derived from such service, and describes the nature and mode of procedure of the meteorological services already existing in the several countries.

It was pointed out in the course of the debate in the third commission that the French Government had already decided to organize this service along the lines suggested by the reporter as best suited for such a purpose, and had made the requisite appropriation. M. Palazzo, delegate of Italy, and a member of the International Meteorological Commission, expressed his hearty approval of the report. The following resolution was adopted by the third commission and unanimously approved by the assembly:

"The assembly decides:

"That the report of M. Louis Dop on the question of agricultural meteorology be submitted officially by the International Institute of Agriculture to the president of the international meteorological committee.

"The president of the committee will be requested to call a meeting of his colleagues to place before them officially the request of the institute that they resume the study of the problem of agricultural meteorology, which has already been discussed by several international congresses of meteorology, with a view to drawing up a program for the international organization of agricultural meteorology.

"This program will subsequently be submitted for the approval of the adhering governments, in conformity with article 9, paragraph f, of the convention of June 7, 1905."

8. Insurance Against Damage by Hail.

A report on this question, prepared by the permanent committee, was presented by M. Bolle, permanent delegate of Belgium. It was supported by a detailed study of the present status and development of insurance against hail in the different countries, prepared by the bureau of economic and social intelligence of the institute. The report was referred for consideration to the fourth commission.

The permanent committee, in presenting this report, considered that hail is one of the most widespread causes of serious injury to farm crops and that insurance against this evil is not as widespread as it should be. It considered that one of the first steps toward rendering such insurance general, safe, and profitable would be to procure reliable statistics on the incidence of destructive hailstorms and on the damage caused by them to the crops. Such statistical data, gathered on a uniform plan for all adhering countries and assembled and published by the institute, would form a reliable basis on which actuaries could calculate the risk incurred and would allow of judging whether policies were issued at a fair rate.

The fourth commission, however, after discussion, decided that it would be undesirable to ask for the detailed information called for under this head by the permanent committee. It considered hail a local and not an international question, and concluded that the assembly should only call the attention of the adhering governments to the subject. The following resolution was proposed by the fourth commission and adopted by the assembly:

"The general assembly calls the attention of the several governments to the desirability of organizing a regular service for ascertaining the incidence of hailstorms and the damage they have caused, based on the general principles set forth in the report presented to the permanent committee on this subject.

"The general assembly also requests the Governments to report to the institute legislative, administrative, or private measures relative to insurance against hail, and instructs the permanent committee to present a report on this question at the next session of the assembly."

9. STATISTICS OF AGRICULTURAL COOPERATION.

The general assembly of 1909 passed a resolution instructing the permanent committee to draw up a plan for the organization of international statistics of cooperation.

The delegate of the United States to that assembly, Mr. George K. Holmes, made the following statement on this question:

"The proposal for the adoption of a uniform system of statistics of agricultural cooperation will be received with much satisfaction by the United States. The Department of Agriculture is making an inquiry into the different branches of this question, and will conform, as far as possible, with the statistical method which the institute will propose.

"In collecting information on agricultural cooperation the United States should in future work along the plan which will be approved by the institute."

In accordance with the instructions of the assembly of 1909 the permanent committee ordered the bureau of social and economic intelligence to make a thorough study of the question.

On this a report was submitted on behalf of the permanent committee by M. De Pozzi, delegate of Austria to the present general assembly.

This report was referred for consideration to the fourth commission. The discussion showed that the commission fully accepted the main ideas underlying the proposals. The proposals set forth that these statistics must embrace all associations which come within the economic conception of cooperation. They should not be limited merely to those associations which are registered as cooperative, or which come within the purview of the special legislation on cooperation enacted in certain countries.

The sense of the commission was that the definition of cooperation given in the permanent committee's report should be still further enlarged so as to include all cooperative associations formed for the economic or social advancement of the agricultural population. The following resolutions on this head were unanimously adopted by the fourth commission and by the general assembly:

"1. The general assembly considers that in order to accomplish one of the functions assigned it by the convention of June 5, 1905, the institute must possess comparable data of agricultural cooperation obtained on a uniform plan.

"2. The general assembly therefore calls on the adhering Governments which have not yet got such statistics, or which have only imperfect ones, to organize such a service, so as to make it possible for the institute to extract therefrom the data it requires and which are scheduled separately in a later paragraph.

"3. These data could be communicated directly by the different Governments in their final shape; that is to say, already drawn up in tables of which the institute would furnish a sample, or they could be abstracted by the institute itself from the statistical reports sent in by the Governments.

"4. The general assembly considers that in order to obtain accurate and comparable data for all countries which have some form of agricultural cooperation the inquiries must be restricted to a few points. These must be fundamental ones, and such as to give an idea of the absolute value (if measureable in figures) or the relative value of agricultural cooperation in the several countries. But before deciding on the details of such statistics a definition of agricultural cooperation must be given.

"5. The general assembly is of opinion that in giving a definition of cooperation one must be guided not by juridical but by economic considerations. An association must be recognized as a cooperative association if it purposes to promote the economic interests of the members by placing in common their capital and labor, or by subjecting them to mutual obligations, even if such association has not the form recognized as 'cooperative' by the jurisprudence of the different governments, and only exists de facto, without being registered or formally recognized by law. Nevertheless, the general assembly admits the advisability of stating in the case of each cooperative association the nature of its constitution from a juridical standpoint. The general assembly also recognizes the need of taking into consideration, apart from the economic criterion, the moral and social factors which have a part in the formation of agricultural cooperative associations.

"6. This definition of cooperation being agreed to the different subdivisions into which it falls should be settled, so that each unit may be properly classified from the start.

"The general assembly considers that here again practical rather than theoretical considerations should be the guide. It must be remembered that often one cooperative association fulfills several functions; therefore a cooperative association should be classified under that branch of its business, which is of most importance; such associations rarely restrict themselves to one single branch of work.

"As a starting point for the work of each Government the general assembly suggests the following six main categories which would seem to fit in with present conditions:

"(1) Credit.
"(2) Purchase and purchase and sale combine.
"(3) Production.
"(4) Production and sale combined.
"(5) Insurance.
"(6) Miscellaneous cooperative associations.

10. FINANCE.

In conformity with article 5 of the convention of June 7, 1905, which established the institute, it rests with the assembly to fix the limits of the expenditure which may be incurred by the permanent committee and to audit and approve the accounts. To enable the assembly to discharge this important duty, a full report as to the financial situation of the institute, along with the estimates of expenditure in 1911, was presented by the permanent committee, the reporter for the committee being M. Zabiello, permanent delegate of Russia.

The report shows that as the several branches of the institute's work were only partially organized until January, 1911, a surplus has accumulated amounting, at the end of 1910, to 669,703 francs, 42 centimes.

The total estimated revenue for 1911 amounts to 814,500 francs, made up as follows:

	Francs.
Contribution from His Majesty the King of Italy	300,000
Quotas paid by the adhering Governments	499,500
Interest on money deposited	15,000
Total	814,500

As the institute has no need to form a reserve fund in the commercial sense, the permanent committee proposed that the surplus of 660,000 francs be applied to supplement the regular income of the institute in meeting the requirements of the full service which is now in working order.

The estimates for 1911, presented to the assembly, show that it is expected to meet this year's expenditure out of the regular income, though the increased expenditure on printing may make it necessary to draw on the reserve fund for a sum which will not exceed 69,000 francs. For the succeeding years 1912 and 1913 it is easy to foresee that the enlarged program of work which the permanent committee is pledged to carry out will entail increased expenditure.

This can, however, be met out of the surplus over from the first years. The reporter expressed the belief that this surplus would suffice to meet the increased expenditure of the institute for another three years, i. e., until 1915. But in view of the increased volume of the institute's work it will then become necessary for the adhering Governments to increase their contributions to the maximum foreseen under the treaty of June 7, 1905. In the course of the debate it was pointed out that whenever the institute finds that it requires that increased contribution, it has the right to notify the adhering Governments to that effect in accordance with the terms of the treaty, which says:

"In any event the contribution per unit of assessment shall never exceed a maximum of 2,500 francs.

"As a temporary provision the assessment for the first two years shall not exceed 1,500 francs 'per unit.'"

In the discussion in the first commission, to which this report was submitted, the delegate for Hungary stated that after the first two years of the institute's life, i. e., since 1910, the Hungarian Government, in accordance with the treaty, had appropriated the higher sum for its contribution, and was prepared to pay same whenever called upon.

The action of the general assembly was as follows:

The statement of receipts and expenditure for the financial years 1909 and 1910 and the estimates for 1911 were approved.

The assembly decided—

To vote a lump sum to cover the expenses of the institute for the years 1912 and 1913; this lump sum, amounting to a maximum of 2,298,000 francs, will include all the sums available for the financial years 1912 and 1913, and is subdivided as under:

	Francs.
Balance from previous years (minimum 60,000 francs) maximum	669, 000
Total receipts expected in 1912	814, 500
Total receipts expected in 1913	814, 500
Total	2, 298, 000

2. To request the Governments of the adhering countries, through the intermediary of their respective delegations, to insure the regular payment of their annual contributions to the institute during the first four months of the year.

11. MISCELLANEOUS.

In connection with the discussion of the various branches of the service of the institute in the collection of statistical and other information from the several countries, it was deemed wise by the general assembly to permit the permanent committee, in cases where it seemed desirable, to arrange for the selection of individuals—officers of the Government or otherwise—in the several countries to supply documents and other material to the institute. The following resolution was adopted:

"The general assembly decides to accept the principle of appointing official correspondents to the institute in conformity with article 20 of the by-laws.

"These correspondents will supply the institute with the requisite scientific documents."

Aside from the formal resolutions of the general assembly above set forth certain less formal actions in the nature of expressions of wishes or desires were taken. These were as follows:

"1. The general assembly expresses the wish that the permanent committee place in the hands of the adhering Governments the reports on questions up for discussion before the general assembly at least two months before the assembly meets.

"2. The general assembly of the institute considers that the competent bureau would do a very useful work in collecting the greatest possible number of data and practical information on the cost of production of agricultural staples on certain estates in different countries, and by publishing such information in a special chapter of the Bulletin of Agricultural Intelligence.

"3. The general assembly expresses the wish that the institute request the adhering Government for regular information on the consumption of fertilizing substances, so as to insert such information in the monthly Bulletin of Agricultural Statistics."

Before concluding its proceedings the assembly requested its president to convey to his Majesty the King of Italy, through the proper channel, the expression of its most sincere gratitude for his continued and generous support of the institute and the personal interest he takes in its work.

At the conclusion of the proceedings, Mr. Foster delivered the following address in the name of the American delegation:

"My fellow delegates from the United States and myself can not let this assembly bring its proceedings to a close without expressing our appreciation of the courteous consideration with which the suggestions and proposals made by the American delegation have been received. We wish to place on record the great pleasure it has given us to be thus brought in contact with so many eminent authorities from all the nations of the world.

"The delegation wishes to express its thanks to the officials of the institute, to the president, and to the permanent committee for the work accomplished so far, which is full of promise for the future. These results are largely due to the untiring and intelligent work of the illustrious president of the institute, Marquis Cappelli.

"Rome is the seat of the institute, and Rome will always be its permanent headquarters, but it has occurred to me and to my colleagues of the American delegation that the general assembly might perhaps hold its sessions from time to time in other countries. I do not make this suggestion as a motion to be discussed or considered at this time. I only wish to say that if ever the permanent committee sees fit to adopt such an idea, and if the institute would accept the invitation, the Government of the United States would be proud to receive the representatives of all the nations as its guests at Washington.

"This delegation wishes to state to the assembly the profound impression made on it by seeing gathered in this hall the representatives of all the nations of the earth, convened together not to discuss the interests of one country or of one people, but the economic interests of the whole human family.

"As the eminent delegate of Chile remarked in this morning's debate, the primary need of our civilization is to have at a fair price an abundant supply of the staples of agriculture, which are the daily bread and clothing of the people.

"The peoples of the earth pray every morning for their daily bread, and the problem which the institute has to solve is to so regulate the relations between consumers and producers that this daily bread may be bought and sold at a price which will be fair to both.

"By solving this dual problem we shall strengthen the nations in their sovereignty, bind the world together in the new internationalism, and hasten the dawn of the day of the lasting peace of God."

62d Congress, 2d Session
HOUSE OF REPRESENTATIVES
Document No. 310

REPORT ON THE WRECK OF THE MAINE

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

REPORT OF BOARD CONVENED AT HABANA,
CUBA, BY ORDER OF THE SECRETARY OF THE
NAVY, TO INSPECT AND REPORT ON THE
WRECK OF THE "MAINE" (OLD)

December 14, 1911.—Message and accompanying papers referred to the Committee on Naval Affairs and ordered to be printed

WASHINGTON
1911

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

LETTER OF TRANSMITTAL.

To the Senate and House of Representatives:

A board of naval officers, of which Admiral Vreeland was the senior member, and of which Col. William M. Black, of the Corps of Engineers of the Army, was also a member, by order of the Secretary of the Navy, was convened at Habana on November 20, 1911, to inspect the wreck of the *Maine* and to make a report thereon.

The board finds that the injuries to the bottom of the *Maine*, as described in the report, were caused by the explosion of a charge of a low form of explosive exterior to the ship between frames 28 and 31, strake B, port side. This resulted in igniting and exploding the contents of the 6-inch reserve magazine, A–14–M, said contents including a large quantity of black powder. The more or less complete explosion of the contents of the remaining forward magazines followed. The magazine explosions resulted in the destruction of the vessel.

I have the honor to transmit herewith the full text of the report.

Wm. H. Taft.

The White House, *December 14, 1911.*

WRECK OF THE "MAINE."

PLAZA HOTEL,
Habana, Cuba, December 1, 1911.

1. In obedience to the Navy Department's order, No. 3875–79, dated November 10, 1911 (copy appended hereto marked "Exhibit A"), the board appointed for the purpose of inspecting and reporting upon the wreck of the U. S. S. *Maine* (old), reports as follows:

2. The board met at the board room, Plaza Hotel, Habana, Cuba, at 4 p. m., Monday, November 20, 1911.

Present: Rear Admiral Charles E. Vreeland, United States Navy, senior member; Chief Constructor Richard M. Watt, United States Navy, member; Col. William M. Black, Corps of Engineers, United States Army, member; Commander Joseph Strauss, United States Navy, member; Commander Charles F. Hughes, United States Navy, member and recorder.

3. The board met daily, except Sunday, according to the record of proceedings appended hereto, marked "Exhibit B."

4. The wreck of the *Maine* having been unwatered and a large amount of the mud removed, the board was enabled to inspect generally the interior of the wreck. Mud was removed from under the vessel at such points as the board considered could furnish information in regard to the condition of the damaged structure. Mud was also removed from the interior as requested, and the board made an exhaustive examination of the wreck. The board found the destruction of the vessel far more extensive than had been anticipated.

5. The *Maine* was an armored vessel, 324 feet long, 57 feet beam, load draft 21 feet 6 inches, load displacement 6,650 tons. She carried four 10-inch guns, six 6-inch guns, and four torpedo tubes, besides a smaller battery.

6. The *Maine* "arrived in the harbor of Habana, Cuba, on the 25th day of January, 1898, and was taken to buoy No. 4, in from 5½ to 6 fathoms of water, by the regular Government pilot."

* * * * * * *

7. "The destruction of the *Maine* occurred at 9.40 p. m., on the 15th day of February, 1898, in the harbor of Habana, Cuba, she being at the time moored to the same buoy to which she had been taken upon her arrival. There were two explosions of a distinctly different character * * *." Two officers and two hundred and sixty-four of her crew perished.

8. In accordance with the usual procedure, a naval court of inquiry was at once organized for the purpose of inquiring into the circumstances connected with the loss by explosion of the *Maine*, and the quotations in paragraphs 6, 7, and 8 are taken from the report of the court of inquiry. The evidence as to the condition

of the wreck upon which the court of inquiry reported was obtained principally from divers, and it was not possible to form any "definite conclusion as to the condition of the wreck."

9. By an act of Congress, approved May 9, 1910, the Secretary of War and the Chief of Engineers were authorized and directed to provide with all convenient speed for the raising or the removal of the wreck of the U. S. battleship *Maine* from the harbor of Habana, Cuba, and for the proper interment of the bodies therein in Arlington Cemetery; and an appropriation on account of the work was authorized. A board was appointed, charged with the work of raising or removing the wreck of the *Maine* from Habana Harbor. In order to lay bare the wreck to permit a careful examination to be made before disturbing any parts which might indicate the cause of the disaster, that board proceeded to build a cofferdam around the wreck.

10. Before the unwatering of the cofferdam was started a representative of the Navy Department was ordered to Habana for the collection of data and identification of exposed wreckage for submission to a board of investigation when ordered. Later a second representative of the Navy Department was sent to verify the identification of certain wreckage prior to its necessary removal to permit the work of the War Department to proceed. The representative of the Navy Department first ordered to Habana has been continuously on duty with the wreck and upon the convening of this board reported to the senior member for duty in attendance upon the board. Under his direction a careful record was made of all parts of wreckage as exposed; photographs were taken illustrating the progress of the work; plans were prepared on which were plotted, as exposed, the actual positions in which the principal displaced portions of the *Maine* were found; and models were prepared to illustrate damaged areas.

11. The Navy Department was informed as to the progress of the work of exposing the wreck, and on November 10, 1911, appointed a board, as stated in paragraph 1, for the purpose of inspecting and reporting upon the wreck of the U. S. S. *Maine* (old). This board was notified that on November 20, 1911, the wreck would be ready for examination, and, as stated in paragraph 2, organized in Habana, Cuba, on that date.

12. From a large number of photographs taken prior to its arrival in Habana, the board has selected certain views to illustrate the nature of the wreckage, Exhibits C 1, C 2, C 3, C 4, C 5, C 6, C 7.

13. Under the direction of the board, photographs, Exhibits D 1, D 2, D 3, D 4, D 5, D 6, D 7, D 8, D 9, D 10, D 11, D 12, D 13, were taken to illustrate the wreck as viewed by the board.

14. The plans which accompany this report, Exhibits E, F, G, H, J, K, were generally verified by the board. These plans do not show intact portions as a rule, but do show the positions of the principal displaced portions of the ship, the general direction of transition of various parts, and the approximate distance of their displacements from original locations.

15. Exhibit E is a plan view of the wreck as exposed, damaged displaced parts only shown.

16. Exhibit F is a side elevation or profile view, in outline only, of the keel and present limit of the sides of the ship; it also shows in outline the present shape of several important sections.

17. Exhibit G is of the outer bottom developed, showing the exact location and extent of visible breaks and bends in same.

18. Exhibit H shows the visible breaks and bends in the inner bottom.

19. Exhibit J shows the same for protective deck at top of armor, and Exhibit K for protective deck forward of transverse armor.

20. Exhibit L is a plan showing borings to wreckage around the forward half of the vessel; Exhibit M is a section taken about 25½, illustrating above borings.

21. Exhibit N is a model prepared to scale (one forty-eighth full size), showing wreckage.

22. *Description of the wreck.*—For convenience of description, the *Maine* wreck may be considered in four portions.

23. (*a*) *Forward portion, from the bow to about frame 17 or 18, a length of about 60 feet.*—This portion has the shape and semblance of the forward portion of a ship with outer skin practically intact as high up as the armored berth deck. The starboard side of the armored berth deck is in position, while the port side is displaced irregularly, parting as shown on the deck plan, Exhibit K. Transverse bulkhead 12, below the armored berth deck, is displaced and dished forward, parts attached to the sides being folded forward. This bow portion is pointed nose down in the mud, to port, and is lying on its starboard side. If the foremast were in place relative to the deck, it would point below the horizontal. The ram at bow has traveled, relative to the plane of frame 18, through the arc of a circle of about 110 degrees. The line of intersection of vertical keel and outer flat keel, originally practically horizontal, is now 113 degrees to port of the vertical plane of the intact vertical keel of the ship, and inclined downward 35 degrees from a horizontal plane. The highest point of the outer flat keel, approximately frame 18, is 31 feet above the prolongation of the keel of the after intact portion of the ship as she now lies.

24. (*b*) *Portion in vicinity of forward magazines, from frame 18 to about frame 30, a length of about 48 feet.*—The upper part of this area, including the starboard 10-inch turret and guns, is entirely swept away. There is left in position only about half of the bottom, nearly all of which is of the starboard side of the ship. The ship as built had transverse bulkheads on frames 18, 21, 24, and 30, and in the hold had two fore-and-aft bulkheads between frames 18 and 24, and four fore-and-aft bulkheads between frames 24 and 30. Of these bulkheads bounding magazine spaces, only one is still attached to the intact portion of the ship, namely, the fore-and-aft bulkhead on starboard side separating the 10-inch magazine from coal bunker outboard of magazine. This bulkhead is turned down to starboard against the inner bottom. The section of transverse bulkhead 21 between storerooms on the starboard side is still attached to the ship's side, while a part of this bulkhead 21 between the magazines was found inverted and at frame 28. All side armor and all side plating above armor shelf are missing. The keel line of this portion, beginning at highest part given above, frame 18, is inclined vertically downward for about 15 feet, frame 18 to 22, then the slope decreases to 15 degrees from the horizontal until it reaches the prolongation of after intact keel (about frame 35). The outer flat keel plate remains unbroken throughout; the vertical keel and flat keelson are broken

at frames 18, 21½, and 30, and flat keelson at frame 27. The upper decks of this portion of the ship were displaced upward and forward or aft from the breaks, as shown on plans, Exhibits E, J, K.

25. (*c*) *Forward boiler-room portion, from frame 30 to frame 41, a length of 44 feet.*—The upper part of this portion, including side armor, was swept away. The protective deck is broken in several places, displaced upward and mainly to starboard. The decks above protective deck are displaced upward and aft, pivoting generally about 41. The conning tower attached to main deck, superstructure deck, and bridge between frames 30 to 32 described the arc of a half circle, up and aft and down, landing on main deck starboard side about frame 52—now being about 85 feet aft, inverted, and to starboard of original position. The weight of the conning tower alone is about 50 tons. The four forward boilers, A, B, C, and D, are intact, but are displaced aft through distances varying from 5 to 10 feet and somewhat to starboard, rolling through angles varying from 16 to 76 degrees, as shown by Exhibit O. The coal-bunker bulkheads, outboard of the boilers in this portion, are practically intact as far forward as frame 35; the parts forward of 35 to 30 both sides are still attached to the bottom plating but displaced aft and curled to starboard.

26. (*d*) *After half of ship, from frame 41 to the stern, a length of 172 feet.*—This portion of the ship has a list to port of 6½°, with a slight trim by the stern. The underwater structure and underwater shell are intact abaft frame 41, and the upper works are intact abaft frame 54. The four after boilers are intact and in their original positions. The four outer strakes of the port side of protective deck, for a length of at least 36 feet, are rolled up aft and to port under the main deck about an axis from frame 48 on the inboard end to frame 46 outboard. The end of this section of the armored deck which was originally forward is now buried in the mud beyond the ship's side. This movement of the armored deck lifted the main deck, and the main deck at port side forward of the barbette is now fully 2 feet above its original position. The ship's side plating between the main and protective decks forward of the port barbette is broken out. The upper decks are badly wrecked or distorted locally between frames 41 and 54, but are still in place.

27. From Exhibit G, showing outer bottom plating, it will be noted that the starboard half of plating within the worst damaged area in vicinity of forward magazines, frames 18 to 30, is still practically intact as far up as armor shelf, except for the irregular diagonal break forward, frame spaces 17 to 24. The outer flat keel is practically in position with reference to adjacent parts of bottom.

28. The port outer bottom plating, between frames 18 and 32, is displaced and distorted, either in or out, as given below.

29. All of this plating, below armor shelf, is exposed to view except a section above the bilge keel forward of frame 30 to 29, which is attached in part at least to other bottom plating in sight farther forward, as shown by soundings where the visible part enters the mud at its frame No. 20, or thereabouts, being inclined downward in the same direction as the bow of the ship is pointed and flat against the bow, as shown by photograph marked "Exhibit D 9."

30. The remaining bottom plating in question, port side, between garboard strake and bilge keel, consists of four strakes, B, C, D, and E. Plates in these strakes are each 20 feet long and vary in width from 3 to 4 feet. The length of the area in question is about 56 feet, each strake therefore having three or more lengths of plate in it. In this area there are several breaks and tears, along seams, across butts, and three lines of breaks across plates. The extent of the breaks along seams and butts, the rivets generally failing, is seen from plan of bottom plating, Exhibit G. In general, the breaks resulted in separating the adjacent plating into four distinct sections, which are still attached to the ship at their ends farthest from the breaks separating them from each other. The sections may be bounded by their breaks or tears and their direction of motion briefly analyzed as follows:

31. Section No. 1: Formed by parting the rivets of the inboard seam of garboard or A strake from frame 31 forward to the butt at 30½, across the butt-strap at 30½, forward along the inboard seam of B strake to 27½, across the butt-strap of B strake at 27½, aft along the outboard seam of B strake to about 28, irregularly and diagonally across C strake from frame 28 to 29, and aft along the outer seam of C strake as far as frame 33. This section of plating of B and C strakes as just described, an area of approximately 100 square feet, *was displaced upward, inward, and to starboard through approximately 180°*, having swung about an axis of about 45° from about 30½ inboard and forward to about 31½ outboard and aft. The transverse floor plates between the outer skin plating above described and the inner bottom were crumpled; that part of the inner bottom plating directly over this section of outside plating *was displaced inward and aft* and crumpled in numerous folds. The longitudinal directly over the center of B strake tore about frame 28, was twisted, the forward end *displaced upward* and left approximately 6 feet above its original position. This plating is shown in detail on photographs, Exhibits D 1, D 2, D 3. The wreckage of longitudinal and inner bottom shown in the foreground, Exhibit D 1, was cut away, and Exhibits D 2 and D 3 were taken later to give an unobstructed view of this plating.

A special model of this vicinity accompanies this report, marked "Exhibit P."

A perspective sketch of this plating is appended hereto, marked "Exhibit Q."

32. The condition of the plating described herein as section No. 1 was noted by divers in 1898. See the printed report of the court of inquiry: Witness, Gunner's Mate Olsen: Page 71, fourth answer from bottom; page 72, second and fourth answers; page 74, third answer. Witness, Gunner's Mate Thomas Smith: Page 78, second answer, also answer at bottom; page 79, second and fifth answers. Witness, Gunner's Mate Rundquist: From the middle of page 90 to the bottom of page 92.

33. Section No. 2: Outboard of section No. 1 and somewhat similar in shape. Formed by parting the rivets along the inboard seam of D strake beginning about frame 33 and extending forward to about frame 29, then by a diagonal tear across C strake from frame 29 to frame 28, forward by parting the rivets along the inboard seam of C strake to 26½, tearing transversely across C strake, parting the rivets

in the butt strap of D strake at 26½, aft along the outboard edge of D strake to 27½, and by a tear irregularly across E strake about 27½, then by parting rivets aft along the outboard edge of E strake to about 29, beyond which there is a series of tears across plating all the way up to the armor shelf. This section was displaced downward and outward about a fore-and-aft axis near the bilge keel (on F strake).

34. Section No. 3: Directly forward of original location of section No. 2. Formed by parting the rivets along the inboard edge of B strake from 18 aft to 22½, across buttstrap of B strake at 22½, aft along the inboard edge of C strake to 26½, tearing transversely across C strake at 26½, across buttstrap of D strake at 26½, aft along inboard seam of E strake to 27½, irregularly across E strake abaft 27, and forward along outboard edge of E strake to frame 15. This section was displaced outward, pivoted about 17, and is now flat against the bow, with its original inside now outside.

35. Section No. 4: Originally adjacent to and above section No. 3. The portion now exposed includes all the side plating above the outboard seam of E strake (parted from frame 15 aft to where it disappears in the mud about 22). It is impossible to fix definitely the after boundary of this section, as the extreme end is still in the mud. This section was displaced similarily to section No. 3, out and forward about an axis across frame 15. It is now lying flat against the forward intact portion, after end pointed downward, with the original inner side now outside.

36. The débris of 1-pounder, 6-pounder, 6-inch, and 10-inch ammunition was found widely scattered throughout the wreck, as far forward as the collision bulkhead, and as far aft as the boiler spaces. The location of much of this material bore little relation to its original stowage position. Powder tanks were torn asunder or crushed and flattened. But few broken shell were found.

37. The condition of the vertical keel and flat keel at frame 18 was ascribed by the court of inquiry of 1898 to the direct effect of an explosion exterior to the ship in that vicinity. Because of its better opportunity for a detailed examination of this wreckage, now fully exposed, the board concludes that the external explosion was not in the vicinity of frame 18. The board believes that the condition of the wreckage, other than that of B and C strakes from 27½ to 33 described hereafter, can be accounted for by the action of gases of low explosives such as the black and brown powders with which the forward magazines were stored. The protective deck and hull of the ship formed a closed chamber in which the gases were generated and partially expanded before rupture.

FINDING.

38. The port garboard strake between 27½ and 31 was ***dished upward*** along its outboard edge as much as 24 inches from a straight line between 27½ and 31 (see Exhibit D 3), the dish disappearing about 31. At a buttstrap in this garboard strake midway between frames 30 and 31 the after plate and strap were found pulled away from the forward plate and upward fully 6 inches farther than the after end of the forward plate, having been torn loose from the flat

keel plate by parting the rivets on the seam between between 30½ and 31.

39. B strake was reenforced for its entire length by a continuous longitudinal. This B plate parted the rivets along its inboard seam from 30½ forward to 27½, across the buttstrap at 27½ and aft along its outboard seam to 28.

40. The next plate outboard, C strake, was torn irregularly from 28 inboard to 29 outboard, and parted the rivets along the outboard seam as far aft as frame 33, remaining attached to B strake along its inboard seam from frame 28 aft. This plating, formed of B and C plates as just described, an area of approximately 100 square feet, *was displaced upward, inward, and to starboard through approximately 180°*, having swung about an axis from about 30½ inboard and forward to about 31½ outboard and aft. (See Exhibits D 2, D 3, D 5, D 7.)

41. The transverse floor plates between the outer skin plating, above described, and the inner bottom plating were crumpled. The part of the inner bottom plating directly over this section of outside plating *was displaced inward and aft*, and crumpled in numerous folds. (See Exhibit D 4, folds marked "X.")

42. The longitudinal directly over the center of B plate parted its fastenings, broke about frame 28, was twisted, the forward end *was displaced upward* and left approximately 6 feet above its original position. (See Exhibit D 1, longitudinal marked "X.")

43. *The board finds that the injuries to the bottom of the Maine, above described, were caused by the explosion of a charge of a low form of explosive exterior to the ship between frames 28 and 31, strake B, port side. This resulted in igniting and exploding the contents of the 6-inch reserve magazine, A-14-M, said contents including a large quantity of black powder. The more or less complete explosion of the contents of the remaining forward magazines followed. The magazine explosions resulted in the destruction of the vessel.*

C. E. VREELAND,
Rear Admiral, U. S. Navy, Senior Member.
R. M. WATT,
Chief Constructor, U. S. Navy, Member.
W. M. BLACK,
Colonel, Corps of Engineers, U. S. Army, Member.
JOS. STRAUSS,
Commander, U. S. Navy, Member.
C. F. HUGHES,
Commander, U. S. Navy, Member and Recorder.

O

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 317.

LANDS WITHDRAWN FROM SETTLEMENT.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

SUBMITTING

A REPORT OF LANDS WITHDRAWN FROM SETTLEMENT UNDER ACT OF JUNE 25, 1910.

December 16, 1911.—Referred to the Committee on the Public Lands and ordered to be printed.

Department of the Interior,
Washington, December 8, 1911.

The Speaker of the House of Representatives.

Sir: In compliance with the provisions of the act approved June 25, 1910 (36 Stat., 847), I have the honor to submit the accompanying report on lands withdrawn from settlement, location, sale, or entry under the provisions of said act.

Very respectfully,

Walter L. Fisher, *Secretary.*

Land withdrawn by authority of the act of June 25, 1910 (36 Stat., 847).

COAL.

States.	No. of with drawal.	Date of recommendation.	Approved by President.	Acreage.
Montana	6	Nov. 21, 1910	Nov. 25, 1910	644,384
Colorado	6	Jan 14, 1911	Jan 18, 1911	916
Do	7	Jan. 26, 1911	Jan. 28, 1911	467,191
Montana	7	Feb. 24, 1911	Feb. 24, 1911	92,025
Nevada	1	Mar. 4, 1911	Mar. 6, 1911	92,141
New Mexico	3	Feb 4, 1911	Feb. 6, 1911	41,791
Do	4	Apr. 5, 1911	Apr. 7, 1911	1,576,064
Do	5	Apr. 22, 1911	Apr. 22, 1911	223,545
Do	6	May 18, 1911	May 18, 1911	1,217,607
Utah	8	Mar 25, 1911	Mar. 31, 1911	4,320
Do	9	May 10, 1911	May 11, 1911	200,888
Do	5	Nov. 20, 1910	Dec. 3, 1910	336,314
Do	6	Feb. 4, 1911	Feb. 6, 1911	905
Do	7	Feb. 14, 1911	Feb. 18, 1911	380

Land withdrawn by authority of the act of June 25, 1910 (36 Stats., 847)—Continued.

COAL—Continued.

States.	No of withdrawal.	Date of recommendation.	Approved by President.	Acreage.
Wyoming	10	May 5, 1911	May 6, 1911	22,909
Do	11	May 15, 1911	May 16, 1911	2,550
Do	12	June 2, 1911	June 16, 1911	447,394
Do	13	June 5, 1911	June 9, 1911	29,447
Do	14	Oct. 7, 1911	Oct. 14, 1911	Correction.
Do	15	Nov. 28, 1911	Dec. 1, 1911	19,716

PETROLEUM.

States.	No of withdrawal.	Date of recommendation.	Approved by President.	Acreage.
California	15	Nov. 10, 1910	Nov. 25, 1910	5,760
Do	16	Dec. 28, 1910	Dec. 30, 1910	18,480
Do	18	Jan. 23, 1911	Jan. 26, 1911	242,158
Do	20	Feb. 23, 1911	Feb. 24, 1911	3,943
Do	21	do	do	33,932
Do	23	Sept. 9, 1911	Sept. 14, 1911	14,719
Wyoming (3)	17	Jan. 21, 1911	Jan. 26, 1911	6,718
Wyoming (4)	19	Jan. 27, 1911	Jan. 30, 1911	143,280
Wyoming (5)	22	June 13, 1911	June 14, 1911	170,333

PHOSPHATE.

States.	No of withdrawal.	Date of recommendation.	Approved by President.	Acreage.
Florida (2)	8	May 13, 1911	May 16, 1911	400
Montana	7	Jan. 9, 1911	Jan. 12, 1911	33,950

POWER SITES.

States.	No of withdrawal.	Date of recommendation.	Approved by President.	Acreage.
Washington	160	Nov. 26, 1910	Dec. 1, 1910	440
Oregon	161	do	do	960
Washington	162	do	do	120
Do	163	do	do	4,810
Montana	164	Dec. 13, 1910	Dec. 16, 1910	2,929
Idaho	165	do	Dec. 19, 1910	12,142
Minnesota	166	Dec. 14, 1910	Dec. 16, 1910	41
Oregon	167	Dec. 17, 1910	Dec. 19, 1910	554
Idaho	168	do	do	2,620
Wyoming	169	Dec. 24, 1910	Dec. 28, 1910	4,094
Oregon and Washington	170	Dec. 28, 1910	Dec. 30, 1910	9,253
Montana	171	Dec. 29, 1910	Jan. 3, 1911	700
Do	172	Jan. 19, 1911	Jan. 23, 1911	980
Idaho	173	Jan. 26, 1911	Jan. 30, 1911	282
Utah	174	Jan. 30, 1911	do	440
Oregon	175	Feb. 27, 1911	Feb. 28, 1911	560
California	176	Feb. 21, 1911	Feb. 23, 1911	322
Montana	177	Mar. 8, 1911	Mar. 14, 1911	759
Utah	178	Mar. 21, 1911	Mar. 31, 1911	640
Washington	179	Mar. 25, 1911	do	3,000
Do	180	do	do	3,150
Oregon	181	Apr. 17, 1911	Aug. 14, 1911	240
Arizona	182	Apr. 11, 1911	Apr. 15, 1911	96,000
Montana	183	Apr. 25, 1911	Apr. 28, 1911	1,640
Minnesota	185	May 13, 1911	May 16, 1911	4,760
Colorado	186	May 16, 1911	do	4,581
Idaho	187	May 19, 1911	May 20, 1911	4
Arizona	188	June 13, 1911	June 16, 1911	10,000
Idaho	189	June 7, 1911	June 12, 1911	19
Wyoming	190	July 7, 1911	July 13, 1911	1,800
Utah	191	July 20, 1911	July 26, 1911	15,000
Colorado	192	July 18, 1911	July 21, 1911	40
Idaho	193	July 21, 1911	July 26, 1911	5,400
Washington	194	July 22, 1911	July 29, 1911	45
Colorado and Utah	195	do	Aug. 1, 1911	8,700
Montana	196	July 26, 1911	July 29, 1911	240
Washington	197	Aug. 9, 1911	Aug. 16, 1911	2,356
California	198	do	do	2,033
Utah	199	do	do	1,600
California	200	Aug. 22, 1911	Oct. 2, 1911	11,247
Do	201	Aug. 24, 1911	Aug. 30, 1911	7,832
Do	202	do	do	2,563
Do	203	do	do	3,357
Do	204	Aug. 25, 1911	Sept. 4, 1911	8,378
Do	205	Sept. 16, 1911	Sept. 26, 1911	21

Land withdrawn by authority of the act of June 25, 1910 (36 Stats., 847)—Continued.

POWER SITES—Continued.

States.	No. of withdrawal	Date of recommendation.	Approved by President.	Acreage
Idaho	206	Sept. 29, 1911	Oct. 2, 1911	8,000
Do	207	Sept. 30, 1911	Oct. 14, 1911	6,321
Minnesota	208	Oct. 10, 1911	Oct. 24, 1911	1,751
Idaho	209	Oct. 11, 1911	Oct. 19, 1911	1,084
California	210	do	do	2,760
Washington	211	Oct. 12, 1911	Nov. 13, 1911	6,014
Do		Nov. 3, 1911	Nov. 7, 1911	1,890
Do	212	Oct. 12, 1911	do	11,171
Do	213	Oct. 13, 1911	Nov. 13, 1911	8,301
Do		Nov. 7, 1911	do	1,000
Idaho	214	Oct 12, 1911	Oct 19, 1911	1,600
California	215	Oct. 19, 1911	Oct. 28, 1911	2,324
Do	216	do	do	4,243
Do	217	Oct. 20, 1911	do	5,958
Do	218	Oct. 27, 1911	Oct. 31, 1911	6,021
Oregon	220	Oct. 25, 1911	Oct. 30, 1911	4,280
Minnesota	222	Oct. 30, 1911	Nov 4, 1911	1,115
Idaho	223	Nov. 7, 1911	Nov. 12, 1911	21,671
Do	226	Nov. 14, 1911	Nov. 23, 1911	4,274
California	231	do	Nov. 29, 1911	1,623
Do	232	Nov. 18, 1911	Nov. 25, 1911	8,300
Wyoming	233	Nov. 20, 1911	Nov. 23, 1911	360
California	234	do	do	5,482

In addition to the withdrawals listed, 238,082 acres classified as coal in the Fort Berthold Indian Reservation, N. Dak., were withdrawn by order of June 27, 1911.

Although not called for in the act of Congress above mentioned, nevertheless there is given a list of the restorations under the said act of June 25, 1910:

Lands restored to entry.

COAL.

States.	No. of restoration.	Date of recommendation.	Approved by President.	Acreage.
Colorado	5	Dec. 10, 1910	Dec. 13, 1910	324,161
Do	6	Dec. 23, 1910	Dec. 30, 1910	176,757
Do	7	Jan. 14, 1911	Jan. 17, 1911	43,347
Do	8	Jan. 24, 1911	Jan. 26, 1911	59,543
Do	9	Jan. 25, 1911	Jan. 27, 1911	34,536
Do	10	Mar. 25, 1911	Mar. 31, 1911	54,778
Do	11	Apr. 27, 1911	Apr. 29, 1911	44,478
Do	12	May 16, 1911	May 17, 1911	371,353
Do	13	May 20, 1911	May 20, 1911	65,721
Do	14	Aug. 26, 1911	Sept. 4, 1911	313
Do	15	Nov. 24, 1911	Dec. 1, 1911	52,363
Idaho	2	Sept. 14, 1911	Sept. 15, 1911	1,028,596
Do	3	Sept. 16, 1911	Sept. 26, 1911	1,767,090
Do	4	Nov. 15, 1911	Dec. 1, 1911	1,860,647
Do	5	Nov. 24, 1911	do	348,463
Do	6	Nov. 28, 1911	do	274,359
Montana	3	Dec. 10, 1910	Dec. 13, 1910	2,400
Do	4	Dec. 27, 1910	Dec. 30, 1910	598,514
Do	5	Jan. 14, 1911	Jan. 17, 1911	23,207
Do	6	Jan. 24, 1911	Jan. 26, 1911	296,872
Do	7	Feb. 24, 1911	Feb. 25, 1911	138,926
Do	8	Mar. 27, 1911	Apr. 7, 1911	160
Do	9	do	Mar. 31, 1911	1,204,629
Do	10	Apr. 19, 1911	Apr. 20, 1911	590,249
Do	11	May 20, 1911	May 20, 1911	1,659,194
Do	12	June 16, 1911	June 19, 1911	67,970
Do	13	Aug. 26, 1911	Sept. 4, 1911	80
Do	14	Oct. 26, 1911	Dec. 1, 1911	309,577
Do	15	Nov. 15, 1911	do	597,298
Do	16	Nov. 24, 1911	do	271,950
New Mexico	2	Dec. 22, 1910	Dec. 30, 1910	22,915
Do	3	Jan. 14, 1911	Jan. 17, 1911	258,231

Lands restored to entry—Continued.

COAL—Continued.

States.	No. of restoration.	Date of recommendation.	Approved by President.	Acreage.
New Mexico	4	Jan. 24, 1911	Jan. 26, 1911	20,065
Do	5	Feb. 24, 1911	Feb. 25, 1911	19,491
Do	6	Mar. 25, 1911	Mar. 31, 1911	86,472
Do	7	May 20, 1911	May 20, 1911	65,672
Oregon	3	Dec. 10, 1910	Dec. 12, 1910	12,066
Do	4	Feb. 24, 1911	Feb. 25, 1911	92,057
South Dakota	1	Mar. 23, 1911	Mar. 31, 1911	494,114
Do	2	Nov. 15, 1911	Dec. 1, 1911	341,132
Utah	3	Dec. 10, 1910	Dec. 13, 1910	91,668
Do	4	Jan. 24, 1911	Jan. 26, 1911	115,417
Do	5	Feb. 14, 1911	Feb. 18, 1911	Correction.
Do	6	Feb. 24, 1911	Feb. 25, 1911	192,987
Do	7	Mar. 25, 1911	Mar. 31, 1911	71,434
Do	8	Apr. 19, 1911	Apr. 20, 1911	74,692
Do	9	May 29, 1911	June 1, 1911	11,190
Do	10	Aug. 26, 1911	Sept. 4, 1911	3,598
Do	11	Oct. 26, 1911	Dec. 1, 1911	24,281
Do	12	Nov. 24, 1911	do	20,790
Do	13	Nov. 28, 1911	do	38,556
Washington	1	May 20, 1911	May 20, 1911	40
Do	2	Aug. 26, 1911	Sept. 4, 1911	566
Do	3	Nov. 24, 1911	Dec. 1, 1911	155
Wyoming	5	Dec. 10, 1910	Dec. 12, 1910	696,586
Do	6	Dec. 22, 1910	Dec. 30, 1910	874,623
Do	7	Jan. 14, 1911	Jan. 17, 1911	416,300
Do	8	Jan. 24, 1911	Jan. 26, 1911	102,092
Do	9	Jan. 26, 1911	Jan. 30, 1911	89
Do	10	Feb 24, 1911	Feb. 25, 1911	230,688
Do	11	Mar. 25, 1911	Mar. 31, 1911	39,594
Do	12	Apr. 19, 1911	Apr. 20, 1911	120,843
Do	13	May 20, 1911	May 22, 1911	927,965
Do	14	May 29, 1911	June 2, 1911	487,551
Do	15	Aug. 26, 1911	Sept. 6, 1911	80
Do	16	Sept. 16, 1911	Sept. 26, 1911	28,721
Do	17	Nov. 24, 1911	Dec. 1, 1911	158,590

PETROLEUM.

California (2)	3	Dec. 29, 1910	Jan. 3, 1911	45,014
California (3)	4	Dec. 30, 1910	do	144,696
California (4)	5	Feb. 17, 1911	Feb. 18, 1911	5,760
California (5)	6	do	do	925,855
New Mexico (1)	8	July 13, 1911	July 21, 1911	419,901
Wyoming (2)	7	Mar. 10, 1911	Mar 14, 1911	1,024

PHOSPHATE.

Idaho No. 2	2	June 17, 1911	June 26, 1911	149,129
Wyoming No. 1	3	July 12, 1911	July 21, 1911	826
Florida No. 1	4	Aug. 26, 1911	Dec. 1, 1911	2,199

POWER SITES.

Oregon	25	Nov. 26, 1910	Dec. 1, 1910	18,740
Colorado	26	do	Dec. 28, 1910	2,506
Idaho	27	do	Dec. 1, 1910	(1)
Utah	28	do	do	8,620
Idaho	29	Nov. 29, 1910	do	10,566
Utah	30	Dec. 24, 1910	Dec. 28, 1910	25,120
Montana	31	Dec. 30, 1910	Jan. 3, 1911	561
Do	32	do	do	1,296
Washington	34	Jan. 20, 1911	Jan. 26, 1911	1,457
Idaho	35	Jan. 21, 1911	do	677
Wyoming	36	Jan. 23, 1911	do	19,277
Do	37	do	do	551
Montana	40	Jan. 27, 1911	Jan. 30, 1911	168
Idaho	39	do	do	380
Wyoming	38	Jan. 23, 1911	Jan. 26, 1911	(1)
Washington	41	Feb. 27, 1911	Feb. 27, 1911	(1)
Idaho	43	do	do	530

[1] Indeterminate.

Lands restored to entry—Continued.

POWER SITES—Continued.

States.	No. of restoration.	Date of recommendation.	Approved by President.	Acreage.
Wyoming	44	Mar. 21, 1911	Mar. 31, 1911	(1)
Do	46	Mar. 25, 1911	.....do	10,032
Idaho	43*a*	Mar. 8, 1911	Mar. 11, 1911	(1)
Oregon	47	Apr. 17, 1911	Aug. 14, 1911	231
Arizona	48	July 5, 1911	July 26, 1911	100
Colorado	49	July 8, 1911	July 21, 1911	(1)
Idaho	50	June 9, 1911	June 12, 1911	2,029
Arizona	51	.....do	June 18, 1911	(1)
Idaho	52	July 7, 1911	July 14, 1911	890
Arizona	53	Aug. 7, 1911	Aug. 10, 1911	23,448
Washington	54	Sept. 15, 1911,	Nov. 29, 1911	2,136
Montana	58	Oct. 31, 1911	Dec. 1, 1911	2,520
Idaho	60	Nov. 7, 1911	Nov. 25, 1911	3,203
Wyoming	61	Nov. 20, 1911	Dec. 1, 1911	400

[1] Indeterminate.

Areas withdrawn from public domain under act of June 25, 1910 (36 Stats., 847), upon recommendations of the Secretary of Agriculture, for use by the Forest Service as ranger stations in the administration of certain national forests since report of December, 1910, was submitted.

States.	Name of national forest near—	Area in acres.	Date of Executive order.
Arkansas	Ozark	40	Feb. 21, 1911
California	Inyo	120	Mar. 24, 1911
Do	Kern	40	.....do
Do	California	160	Mar. 29, 1911
Do	Klamath	80	.....do
Do	Lassen	176	Apr. 3, 1911
Arizona	Apache	40	Apr. 19, 1911
California	Stanislaus	80	.....do
Do	Tahoe	59	Apr. 28, 1911
Nevada	Nevada	80	May 16, 1911
California	Angeles	47	.....do
Do	Stanislaus	80	May 22, 1911
South Dakota	Black Hills	57	June 2, 1911
Wyoming	Medicine Bow	240	June 9, 1911
California	Trinity	17	June 16, 1911
Utah	Fillmore	60	June 26, 1911
California	California	140	June 28, 1911
Nevada	Toiyabe	.172	July 10, 1911
Arizona	Coronado	160	Aug. 15, 1911
Utah	Ashley	80	Aug. 17, 1911
Colorado	Sopris	100	Aug. 18, 1911
Do	Gunnison	60	Aug. 25, 1911
Arizona	Apache	40	Oct. 2, 1911
Montana	Bitterroot	246	Oct. 24, 1911
Do	.....do	240	.....do
Do	Lewis and Clark	160	Nov. 1, 1911
South Dakota	Sioux	120	Nov. 13, 1911
Arizona	Chiricahua	80	.....do
Total (28 stations)		2,802.172	

Area released from withdrawal under act of June 25, 1910 (36 Stats. 847), for ranger station purposes since report of December, 1910, was submitted.

States.	Name of national forest near—	Area in acres.	Date of Executive order.
Arizona	Apache	40	Oct. 2, 1911

Leaving a total of 27 range stations and 2,762.172 acres.

O

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 328.

CRATER LAKE NATIONAL PARK, OREG.

LETTER

FROM

THE ACTING SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT OF EXAMINATION AND SURVEY, WITH MAPS AND PLANS OF SURVEY, FOR ROADS AND TRAILS IN CRATER LAKE NATIONAL PARK, OREG.

December 19, 1911.—Referred to the Committee on the Public Lands and ordered to be printed, with illustrations.

War Department,
Washington, December 18, 1911.

Sir: I have the honor to transmit herewith a letter from the Chief of Engineers, United States Army, dated 16th instant, together with a report from Maj. J. J. Morrow, Corps of Engineers, dated November 21, 1911, with maps, of a survey, with plans and estimates, for roads and trails in Crater Lake National Park, Oreg., made by him in compliance with a provision contained in the sundry civil act of June 25, 1910.

Very respectfully,

Robert Shaw Oliver,
Acting Secretary of War.

The Speaker of the House of Representatives.

War Department,
Office of the Chief of Engineers,
Washington, December 16, 1911.

The Secretary of War.

Sir: I have the honor to submit herewith, for transmission to Congress, a report by Maj. J. J. Morrow, Corps of Engineers, made in compliance with the following provisions of the sundry civil act of June 25, 1910:

> Crater Lake National Park: For surveying, locating, and preparing plans and estimates for roads and trails in Crater Lake National Park, Oregon, and to cover all expenses incident thereto, to be expended under the direction of the Secretary of War, ten thousand dollars.

Maj. Morrow estimates the cost of the proposed system of roads and trails at $642,000, with an additional $65,000 for a system of tanks and water-supply pipes to provide for sprinkling. The estimated cost of maintenance, including sprinkling, is estimated at $20,000 annually. He recommends that if the work be undertaken, an initial appropriation of $100,000 be made to provide plant, shelter, buildings, and construction. Under the plans proposed by Maj. Morrow, it is anticipated that the more important roads would be completed in three or four working seasons; the balance of the system in about seven years.

No estimate of funds for this work was made by the Engineer Department in its annual estimates this year. If Congress should decide to adopt the project, it is recommended that, as recommended by Maj. Morrow, the first appropriation be not less than $100,000, to be followed by others annually with a view to completion in seven years.

Very respectfully,

W. H. Bixby,
Chief of Engineers, U. S. Army.

United States Engineer Office, First District,
Portland, Oreg., November 21, 1911.

The Chief of Engineers, U. S. Army,
Washington, D. C.

Sir: I have the honor to submit the following report on survey, plans, and estimates for roads and trails in Crater Lake National Park.

The sundry civil appropriation act approved June 25, 1910, contained an item in the following language:

> Crater Lake National Park: For surveying, locating, and preparing plans and estimates for roads and trails in Crater Lake National Park, Oregon, and to cover all expenses incident thereto, to be expended under the direction of the Secretary of War, ten thousand dollars.

The duty of making this survey was assigned to this office July 15, 1910. Two field parties were organized and sent into the park about the middle of August, 1910, and continued the work until October 6, when further field work was interrupted by the first heavy fall of snow.

The field work was in charge of Junior Engineer H. L. Gilbert Each party consisted of 1 transitman, 1 levelman, 1 topographer, 2 assistant topographers, 1 draftsman, 1 rodman, 2 chainmen, 1 back flagman, and 1 cook.

The method of the survey was that of a preliminary railroad survey. Control was by azimuth checked by frequent observations of the sun. Y levels were used and bench marks set about every half mile, using United States Geological Survey datum and bench marks. The transit line was referenced at about 1 mile intervals. Topography was taken on both sides of the line to develop a strip within which the final location would fall. Grades sought were maximum of 6 per cent for long distances, 8 per cent for fair distances, and 10 per cent rarely, and only for short distances. Least radius of curvature sought was 50 feet. Discharge measurements were made of springs and creeks within practicable reach of the road location.

The first season's work covered in all about 50 miles of preliminary lines and completed all survey work contemplated excepting about 6 miles of the 36-mile road encircling the lake, the 5 miles of road to the Pinnacles, and the 4 miles of road to the eastern boundary of the park. During the season just closed one party, constituted as each of the parties of the preceding season, was sent into the park in July, under the direction of Junior Engineer W. G. Carroll, and finished the work in about one month of field work.

In the office, after return of the field party, each season, all transit lines were computed and platted to a scale of 1/2400, the location was profiled, and preliminary estimates were made. The finished location was also platted on a map of the park to scale of 1/48000.

DESCRIPTION OF THE PARK AND ROADS DESIRED.

A complete description of Crater Lake Park is found in Professional Papers No. 3, Department of the Interior, United States Geological Survey, entitled "The Geology and Petrography of Crater Lake National Park," by J. S. Diller and H. B. Patton: Government Printing Office, 1902.

Briefly, Crater Lake National Park was made a national park by the act of Congress of May 22, 1902. It is about 18 miles north and south by about 13½ miles east and west, and contains 249 square miles. It lies roughly about halfway between Portland, Oreg., and San Francisco, Cal., and about 50 to 60 miles east of the present main line of the Southern Pacific Railroad between those two cities, but not more than 10 miles west of the proposed new main line of the same road, known popularly as the Natron cut-off.

The park is now reached with considerable difficulty. The easiest method is by rail to Klamath Falls (about 88 miles from the main line), thence by boat to a landing on the shore of Upper Klamath Lake, whence the Crater Lake Co. operates an auto stage via Fort Klamath to their lodge on the rim of the crater (a run of about 30 miles). It may be reached by automobile from Klamath Falls or from Bend, Oreg., both approaching via Fort Klamath, or from Medford approaching from the west and about 100 miles distant. Upon the completion of the Natron cut-off the railroad will be within about 10 miles of the eastern boundary of the park, and a road will doubtless be at once constructed toward the lake along the valley of Bear Creek.

The roads now in the park are simple and crude. The headquarters of the superintendent, near the head of one fork of Anna Creek, is at the junction of the roads leading to Medford and to Fort Klamath. From this point about 5 miles of road follows up another fork of Anna Creek to the rim of the crater, just west of Garfield Peak. This road, especially the mile nearest the rim, is exceedingly tortuous and steep, some of the grades being nearly 30 per cent. All existing roads are improved only by side-hill excavation work, with occasional log revetments, are tortuous and narrow, and in the dry summer (the only season) become badly rutted, the soil being a light dry pumice. They are, however, extensively traveled by automobiles, the traffic showing a gradual increase as the beauty of the park becomes more widely known. There are no other roads in the park, and but few trails, those that exist being gradually developed by the superintendent of the park for use of his rangers in protection against forest fires.

The central and dominating feature of the park is the lake, which partially fills the crater in the wrecked mountain. The following extracts from the Diller and Patton report describe it briefly:

> On the rim of Crater Lake there once stood a prominent peak to which the name Mount Mazama has been given. Mount Mazama is practically unknown to the people of Oregon, but they are familiar with Crater Lake, which occupies the depression that resulted from the wreck of the great peak. The remnant of Mount Mazama is most readily identified when referred to as the "rim of Crater Lake." The wrecking of Mount Mazama was the crowning event in the volcanic history of the Cascade Range, and resulted from a movement similar to that just noted in Mount Thielsen, but vastly greater in its size and consequences. This volcanic activity culminated in the development of a great pit or caldera, which for grandeur and beauty rivals anything of its kind in the world.
>
> GENERAL FEATURES.
>
> The rim encircling Crater Lake, when seen from a distance from any side, appears as a broad cluster of gently sloping peaks rising about 1,000 feet above the general crest of the range on which they stand. The topographic prominence of Mount Mazama can be more fully realized when it is considered that it is close to the head of Rogue, Klamath, and Umpqua Rivers. These are the only large streams breaking through the mountains to the sea between the Columbia and the Sacramento, and their watershed might be expected to be the principal peak of the Cascade Range.
>
> To one arriving by the road at the crest of the rim the lake in all its majestic beauty appears suddenly upon the scene, and is profoundly impressive. The eye beholds 20 miles of unbroken cliffs, the remnant of Mount Mazama, ranging from over 500 to nearly 2,000 feet in height, encircling a deep, blue sheet of placid water, in which the mirrored walls vie with the original slopes in brilliancy and greatly enhance the depth of the prospect. The lake is about 4½ miles wide and 6½ miles long, with an area of nearly 20½ square miles.

To supplement this brief description it may be added that the surface of the water on the lake is 6,177 feet above sea level, while the lowest point of the rim is over 500 feet higher. The rim at most points is 800 feet high, rising at some points much higher and almost sheer. Near the western margin of the lake rises Wizard Island, almost a perfect cone with a diminutive crater in its peak, about 800 feet above the water. The Phantom Ship, a small pinnacle of rock near the southeast shore, marks the only other break in the sheet of water, which is of great depth, at points reaching nearly 2,000 feet.

Other interesting features of the park are the canyons of Anna Creek (of which excellent views may be obtained from the existing road to Fort Klamath) and the similar canyon of Sand Creek, where the formation has been given the name of "The Pinnacles."

The only roads at present in the park are the two from Fort Klamath and from Medford, leading to the superintendent's headquarters and thence to the rim of the lake. There are numerous trails constructed by the Forest Service from time to time.

In preparing a plan for improvement, as directed by Congress, it was considered of paramount importance to design a road encircling the crater as near to its rim as topography would permit, in order that the lake might be viewed from all possible points. It was believed to be necessary to construct roads from the rim road to the two existing entrances, utilizing the present existing roads as much as possible, and to provide also for a road to the eastern boundary, as this will shortly be the principal entrance to the park. It was also deemed advisable to construct a road leading to The Pinnacles, which road could later be extended into a fourth entrance if desired. About 100 miles of trails are necessary to connect with existing Forest Service trails and provide additional ones. They would be useful to the Forest Service in coping with fires, as well as facilitating the exploration of the park by camping parties. Trails are needed, at three points at least, leading from the rim road to the surface of the lake. Along these lines the plans have been prepared.

The road around the lake is planned to cross the face of the Watchman, pass behind the Glacier Peak, return to the rim before again passing behind Llao Rock, thence following the rim fairly close until Cloud Cap is reached. It then passes successively behind the mountainous masses of the inside slopes of Mount Scott and Dutton Cliff, but returns to the rim again at Sun Creek Notch, from which point it recedes, passing behind Vidae and Garfield Peaks. It returns to the rim at the site of the present lodge of the Crater Lake Co., following the rim thence to the Watchman. The total length of the rim road is between 35 and 36 miles. A trail a little over a mile in length is provided for those desiring to leave the road to obtain the view from Kerr Notch.

From about this same point in the rim road a road is planned to reach The Pinnacles. Its length is about 5 miles.

At the base of Garfield Peak the road to the southern and western entrances is planned to leave the rim road. It is a little more than 3 miles in length to the present superintendent's headquarters, where it forks. There are 7 miles more to the Fort Klamath entrance and about 6½ miles to the Medford entrance. These roads all follow fairly close the existing roads.

From near Round Top the eastern entrance road is planned, following the valley of Bear Creek. It is a little over 4 miles in length.

The total length of all these roads is 61.7 miles. All are shown on the map submitted herewith.

About 100 miles of trails are planned, to enable campers to reach adjacent points, taking advantage of water and pasturage for their camp sites. These trails have not been surveyed, as it was deemed unnecessary to locate them any more definitely than they can be located on the map prepared by the Geological Survey two years ago.

The road has been designed to permit of automobile traffic. It is believed that a regulation excluding automobiles from Crater Lake Park would be a grave mistake, as even now, with the poor roads, nearly all the visitors reach the rim of the lake in this way. The park is within fairly easy access by motor of the numerous growing cities between Portland and San Francisco, and the approaches will gradually improve as the country becomes more thickly populated.

CLIMATIC CONDITIONS.

The season for work in Crater Lake Park is very short. The section has a heavy precipitation, which is nearly all snow, as but little rain falls in the summer months. Most of the work, and nearly all of the heavy work, is at a high altitude, nearly 7,000 feet. Only in an unusually early season can the rim be reached by the middle of June, although there are portions of the approaches that could be worked on in June. July, August, and a part of September will be the usual working seasons, with hardly more than two months available for work on the rim road. After completion, similarly, provision will have to be made for watering the road, or for oiling it, as showers are exceedingly rare until near the close of the season.

WORKING CONDITIONS.

In addition to the short season the work of construction will be hampered by the remoteness of the locality, requiring the importation of all labor and a comparatively long haul of all supplies. The latter condition may be improved before the work can be completed, even if started at once, by the completion of the Natron cut-off. The question of water supply is not an easy one, especially for that portion of the rim road on the northeast side of the lake between the Watchman and Round Top (about 11 miles). No water has been located between Lighting Spring, south of the Watchman, and Cascade Spring, east of Round Top, and this latter, while a large spring, is at a level much below the road, besides being nearly 2 miles away. Rock suitable for macadam is plentiful on the south side of the lake, but none has as yet been located convenient for work over the same stretch of road where the water is lacking. The drift sand that is found at numerous locations is suitable for the small amount of masonry work that will be required.

The following springs and streams were gauged, and it is believed can be counted on to deliver water at all times in equal or greater quantity than was determined, the measurements having been made in September, at about low water:

	Cubic foot-seconds.
Spring below Crater Lake Co.'s lodge near mile 32, Rim Road	0.1
Cascade Spring (head of Bear Creek)	5.0
Anderson Spring (head of Sand Creek)	2.0
Sun Creek at elevation 6,000 (near mile 25½, Rim Road)	.3
Spring at elevation 6,850 (near mile 27½, Rim Road)	.1
Springs (near mile 29½, Rim Road), aggregating	.1
Spring at elevation 6,450 (near mile 30, Rim Road)	2.0
Arant Spring, at headquarters	1.8
Anna Creek, at mouth of Bridge Creek	40.0
Bridge Creek, above Fort Klamath Road	1.0
Lighting Springs (near mile 3, Rim Road), not gauged but estimated, about	.4

BASIS OF PLANS AND ESTIMATES.

As stated, the road is designed with maximum grade of 8 per cent, and this only for short distances, and with a minimum radius of curvature of 50 feet. Cross section in earth or rock is as follows: In embankment, width of subgrade, 16 feet; side slopes 2 on 3; in excavation, side ditches 1 foot deep, width at bottom 2 feet, and side slopes 1 on 1. Surface of broken stone 12 feet wide, 7½ inches at center to 3½ inches at edges. On grades of 2 per cent or higher, side ditches to be paved. Small culverts to be of corrugated iron or vitrified pipe 1 foot in diameter. Large ones of concrete as required.

The unit prices adopted are as follows:

Grading:		
Earth or sand	per cubic yard	$0.30
Hardpan or loose rock	do	.60
Solid rock	do	1.00
Grubbing and clearing	per acre	75.00
Crushed rock, in place, rolled	per cubic yard	3.80
Paving of ditches	per square yard	.50
Construction of rough pack trails	per mile	150.00

ESTIMATES IN DETAIL.

Rim Road, westward from Garfield Peak.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 1 (westward from Crater Lake Co.'s lodge):				
Excavation, class 1	8,140	Cubic yards	$0.30	$2,523.00
Macadam	1,080	do	3.80	4,104.00
Riprap	550	Square yards	.50	275.00
Clearing	1	Acre		75.00
Culverts	4	Number	50.00	200.00
Total				7,177.00
Mile No. 2:				
Excavation—				
Class 1	16,097	Cubic yards	.30	4,829.10
Class 2	1,688	do	.60	1,012.80
Macadam	1,080	do	3.80	4,104.00
Riprap	350	do	.50	175.00
Clearing	3	Acres	75.00	225.00
Culverts	4	Number	50.00	200.00
Total				10,545.90
Mile No. 3:				
Excavation—				
Class 1	7,758	Cubic yards	.30	2,327.40
Class 2	3,421	do	.60	2,052.60
Macadam	1,080	do	3.80	4,104.00
Clearing	2	Acres	75.00	150.00
Culverts	4	Number	50.00	200.00
Total				8,834.00
Mile No. 4 (across face of the Watchman):				
Excavation—				
Class 1	9,994	Cubic yards	.30	2,998.20
Class 3	19,708	do	1.00	19,708.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,220	Square yards	.50	1,110.00
Clearing	1	Acre	75.00	75.00
Culverts	3	Number	50.00	150.00
Total				28,145.20
Mile No. 5 (5,049 feet) (across face of the Watchman):				
Excavation—				
Class 1	8,058	Cubic yards	.30	2,417.40
Class 3	7,982	do	1.00	7,982.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,275	Square yards	.50	1,137.50
Culverts	3	Number	50.00	150.00
Total				15,790.90
Mile No. 6:				
Excavation—				
Class 1	13,222	Cubic yards	.30	3,966.60
Class 2	3,608	do	.60	2,164.80
Class 3	901	do	1.00	901.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,942	Square yards	.50	1,471.00
Culverts	4	Number	50.00	200.00
Total				12,807.40
Mile No. 7:				
Excavation—				
Class 1	7,202	Cubic yards	.30	2,160.60
Class 2	2,890	do	.60	1,734.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,775	Square yards	.50	1,387.50
Clearing	1	Acre	75.00	75.00
Culverts	4	Number	50.00	200.00
Total				9,661.10

ESTIMATES IN DETAIL—Continued.

Rim Road, westward from Garfield Peak—Continued.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 8 (behind Llao Rock):				
Excavation—				
Class 1	14,359	Cubic yards	$0.30	$4,307.70
Class 2	1,362	do	.60	817.20
Macadam	1,080	do	3.80	4,104.00
Riprap	1,998	Square yards	.50	999.00
Clearing	2	Acres	75.00	150.00
Culverts	4	Number	50.00	200.00
Total				10,577.90
Mile No. 9 (behind Llao Rock):				
Excavation—				
Class 1	10,883	Cubic yards	.30	3,264.90
Class 2	7,500	do	.60	4,500.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,941	Square yards	.50	1,470.50
Clearing	4	Acres	75.00	300.00
Culverts	4	Number	50.00	200.00
Total				13,839.40
Mile No. 10:				
Excavation—				
Class 1	10,122	Cubic yards	.30	3,036.60
Class 3	545	do	1.00	545.00
Macadam	1,080	do	3.80	4,104.00
Riprap	721	Square yards	.50	360.50
Clearing	3½	Acres	75.00	262.50
Culverts	4	Number	50.00	200.00
Total				8,508.60
Mile No. 11:				
Excavation, class 1	10,814	Cubic yards	.30	3,244.20
Macadam	1,080	do	3.80	4,104.00
Riprap	610	Square yards	.50	305.00
Clearing	4	Acres	65.00	260.00
Culverts	4	Number	50.00	200.00
Total				8,113.20
Mile No. 12:				
Excavation, class 1	8,162	Cubic yards	.30	2,448.60
Macadam	1,080	do	3.80	4,104.00
Riprap	1,775	Square yards	.50	887.50
Clearing	4	Acres	75.00	300.00
Culverts	4	Number	50.00	200.00
Total				7,940.10
Mile No. 13:				
Excavation—				
Class 1	7,812	Cubic yards	.30	2,343.60
Class 3	574	do	1.00	574.00
Macadam	1,012	Square yards	3.80	3,845.60
Riprap	732	Linear feet	.50	366.00
Trestle	300	do	6.00	1,800.00
Clearing	4	Acres	.50	200.00
Culverts	4	Number	50.00	200.00
Total				9,329.20
Mile No. 14:				
Excavation—				
Class 1	12,266	Cubic yards	.30	3,679.80
Class 3	274	do	1.00	274.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,443	Square yards	.50	1,221.50
Clearing	4	Acres	70.00	280.00
Culverts	4	Number	50.00	200.00
Total				9,759.30
Mile No. 15 (behind Round Top):				
Excavation—				
Class 1	5,400	Cubic yards	.30	1,620.00
Class 2	6,840	do	.60	4,104.00
Macadam	1,080	do	3.80	4,104.00
Riprap	1,665	Square yards	.50	832.50
Clearing	4	Acres	70.00	280.00
Culverts	4	Number	50.00	200.00
Total				11,140.50

ESTIMATES IN DETAIL—Continued.

Rim Road, westward from Garfield Peak—Continued.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 16:				
Excavation—				
Class 1	10,211	Cubic yards	$0.30	$3,063.30
Class 3	138	do	1.00	138.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,612	Square yards	.50	1,306.00
Clearing	4	Acres	50.00	200.00
Culverts	4	Number	50.00	200.00
Total				9,011.30
Mile No. 17:				
Excavation, class 1	12,424	Cubic yards	.30	3,727.20
Macadam	1,080	do	3.80	4,104.00
Riprap	2,943	Square yards	.50	1,471.50
Clearing	4	Acres	60.00	240.00
Culverts	4	Number	50.00	200.00
Total				9,742.70
Mile No. 18 (behind Cloud Cap):				
Excavation—				
Class 1	15,415	Cubic yards	.30	4,624.50
Class 2	122	do	.60	73.20
Class 3	1,374	do	1.00	1,374.00
Macadam	1,080	Square yards	3.80	4,104.00
Riprap	2,941	do	.50	1,470.50
Clearing	4	Acres	60.00	240.00
Culverts	4	Number	50.00	200.00
Total				12,086.20
Mile No. 19:				
Excavation, class 1	7,266	Cubic yards	.30	2,179.80
Macadam	1,080	do	3.80	4,104.00
Riprap	1,100	Square yards	.50	550.00
Culverts	4	Number	50.00	200.00
Total				7,033.80
Mile No. 20:				
Excavation, class 1	9,652	Cubic yards	.30	2,895.60
Macadam	1,080	do	3.80	4,104.00
Riprap	1,900	Square yards	.50	950.00
Clearing	1	Acre	75.00	75.00
Culverts	4	Number	50.00	200.00
Total				8,224.60
Mile No. 21:				
Excavation, class 1	16,063	Cubic yards	.30	4,818.90
Macadam	1,080	do	3.80	4,104.00
Riprap	2,950	Square yards	.50	1,475.00
Clearing	2	Acres	75.00	150.00
Culverts	4	Number	50.00	200.00
Total				10,747.90
Mile No. 21-A (on cliff near Andersons Springs):				
Excavation—				
Class 1	20,443	Cubic yards	.30	6,132.90
Class 2	28,836	do	.60	17,301.60
Macadam	1,080	do	3.80	4,104.00
Riprap	2,750	Square yards	.50	1,375.00
Clearing	4	Acres	75.00	300.00
Culverts	4	Number	50.00	200.00
Total				29,413.50
Mile No. 21-B (on cliff near Andersons Springs):				
Excavation, class 1	14,253	Cubic yards	.30	4,275.90
Macadam	1,080	do	3.80	4,104.00
Riprap	2,500	Square yards	.50	1,250.00
Clearing				200.00
Culverts				200.00
Total				10,029.90
Mile No. 21-C:				
Excavation, class 1	5,255	Cubic yards	.30	1,576.50
Macadam	1,080	do	3.80	4,104.00
Riprap	1,650	Square yards	.50	825.00
Clearing				150.00
Culverts				200.00
Total				6,855.50

ESTIMATES IN DETAIL—Continued.

Rim Road, westward from Garfield Peak—Continued.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 21-D:				
Excavation, class 1	6,541	Cubic yards	$0.30	$1,632.30
Macadam	1,080	do	3.80	4,104.00
Riprap	2,250	Square yards	.50	1,125.00
Clearing				150.00
Trestle				600.00
Culverts				200.00
Total				7,811.30
Mile No. 22 (1,010 feet long):				
Excavation, class 1	1,259	Cubic yards	.30	377.70
Macadam	205	do	3.80	779.00
Riprap	500	Square yards	.50	250.00
Clearing				20.00
Culvert				50.00
Total				1,476.70
Mile No. 23:				
Excavation—				
Class 1	3,623	Cubic yards	.30	1,086.90
Class 2	3,820	do	.60	2,292.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,941	Square yards	.50	1,470.50
Clearing				150.00
Culverts				200.00
Total				9,303.40
Mile No. 24:				
Excavation, class 1	5,195	Cubic yards	.30	1,558.50
Macadam	1,080	do	3.80	4,104.00
Riprap	2,942	Square yards	.50	1,471.00
Culverts				200.00
Total				7,333.50
Mile No. 25 (on bluff at Dutton Cliff):				
Excavation—				
Class 1	8,300	Cubic yards	.30	2,490.00
Class 2	1,358	do	.60	814.80
Class 3	1,276	do	1.00	1,276.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,831	Square yards	.50	1,415.50
Culverts				200.00
Total				10,300.30
Mile No. 26 (on bluff at Dutton Cliff):				
Excavation—				
Class 1	1,270	Cubic yards	.30	381.00
Class 2	11,895	do	.60	7,137.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,941	Square yards	.50	1,470.50
Clearing				300.00
Culverts				280.00
Total				13,592.50
Mile No. 27:				
Excavation—				
Class 1	6,680	Cubic yards	.30	2,004.00
Class 2	3,431	do	.60	2,058.60
Macadam	1,080	do	3.80	4,104.00
Riprap	550	Square yards	.50	275.00
Clearing				75.00
Culverts				100.00
Total				8,616.60
Mile No. 28 (on cliff behind Vidae Peak):				
Excavation—				
Class 1	1,889	Cubic yards	.30	566.70
Class 2	5,700	do	.60	3,420.00
Class 3	940	do	1.00	940.00
Macadam	1,080	do	3.80	4,104.00
Riprap	610	Square yards	.50	305.00
Clearing				225.00
Culverts				150.00
Total				9,710.70

ESTIMATES IN DETAIL—Continued.

Rim Road, westward from Garfield Peak—Continued.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 29 (on cliff behind Vidae and Garfield Peaks):				
Excavation—				
Class 1	12,247	Cubic yards	$0.30	$3,674.10
Class 2	2,360	do	.60	1,416.00
Class 3	584	do	1.00	584.00
Macadam	1,080	do	3.80	4,104.00
Riprap	1,720	Square yards	.50	860.00
Clearing				150.00
Culverts				200.00
Total				10,988.10
Mile No. 30 (on cliff behind Garfield Peak):				
Excavation—				
Class 2	10,400	Cubic yards	.60	6,240.00
Class 3	503	do	1.00	503.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,942	Square yards	.50	1,471.00
Clearing				300.00
Culverts				200.00
Total				12,818.00
Mile No. 31:				
Excavation—				
Class 1	2,367	Cubic yards	.30	710.10
Class 2	1,419	do	.60	851.40
Macadam	1,080	do	3.80	4,104.00
Riprap	760	Square yards	.50	380.00
Clearing				75.00
Culverts				200.00
Total				6,320.50
Mile No. 32 (on slope of Garfield Peak):				
Excavation—				
Class 1	5,958	Cubic yards	.30	1,787.40
Class 2	4,109	do	.60	2,465.40
Class 3	1,936	do	1.00	1,936.00
Macadam	1,080	do	3.80	4,104.00
Riprap	2,665	Square yards	.50	1,332.50
Clearing				300.00
Culverts				200.00
Total				12,125.30
Part of mile No. 33 (1,940 feet long; slope of Garfield Peak):				
Excavation—				
Class 1	6,160	Cubic yards	.30	1,848.00
Class 3	376	do	1.00	376.00
Macadam	405	do	3.80	1,539.00
Riprap	1,110	Square yards	.50	555.00
Clearing				75.00
Culverts				100.00
Total				4,493.00

SUMMARY OF ESTIMATE FOR RIM ROAD.

Mile No. 1	$7,177.00	Mile No. 21-B	$10,029.90
Mile No. 2	10,545.90	Mile No. 21-C	6,855.50
Mile No. 3	8,834.00	Mile No. 21-D	7,811.30
Mile No. 4	28,145.20	Mile No. 22 (1,010 feet long)	1,476.70
Mile No. 5	15,790.90	Mile No. 23	9,303.40
Mile No. 6	12,807.40	Mile No. 24	7,333.50
Mile No. 7	9,661.10	Mile No. 25	10,300.30
Mile No. 8	10,577.90	Mile No. 26	13,592.50
Mile No. 9	13,839.40	Mile No. 27	8,616.60
Mile No. 10	8,508.60	Mile No. 28	9,710.70
Mile No. 11	8,113.20	Mile No. 29	10,988.10
Mile No. 12	7,940.10	Mile No. 30	12,818.00
Mile No. 13	9,329.20	Mile No. 31	6,320.50
Mile No. 14	9,759.30	Mile No. 32	12,125.30
Mile No. 15	11,140.50	**Mile No. 33** (1,940 feet long)	4,493.00
Mile No. 16	9,011.30		
Mile No. 17	9,742.70		390,205.00
Mile No. 18	12,086.20	**Engineering, contingencies, etc., about 10 per cent**	38,795.00
Mile No. 19	7,033.80		
Mile No. 20	8,224.60	**Total for road around the lake**	429,000.00
Mile No. 21	10,747.90		
Mile No. 21-A	29,413.50		

ESTIMATES IN DETAIL—Continued.

Estimate of road to The Pinnacles.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 1:				
Excavation, class 1	7,277	Cubic yards	$0.30	$2,183.10
Macadam	1,080	do	3.80	4,104.00
Riprap	2,700	Square yards	.50	1,350.00
Clearing				225.00
Culverts				200.00
Total				8,062.10
Mile No. 2:				
Excavation, class 1	8,227	Cubic yards	.30	2,468.10
Macadam	1,080	do	3.80	4,104.00
Riprap	2,950	Square yards	.50	1,475.00
Clearing				150.00
Culverts				200.00
Total				8,397.10
Mile No. 3:				
Excavation, class 1	3,214	Cubic yards	.30	964.20
Macadam	1,080	do	3.80	4,104.00
Riprap	1,850	Square yards	.50	925.00
Clearing				150.00
Culverts				100.00
Total				6,243.20
Mile No. 4:				
Excavation, class 1	5,032	Cubic yards	.30	1,509.60
Macadam	1,080	do	3.80	4,104.00
Riprap	2,000	Square yards	.50	1,000.00
Trestle	40	Linear feet	6.00	240.00
Clearing				75.00
Culverts				100.00
Total				7,028.60
Mile No. 5:				
Excavation, class 1	2,766	Cubic yards	.30	829.80
Macadam	1,080	do	3.80	4,104.00
Riprap	1,400	Square yards	.50	700.00
Clearing				75.00
Culverts				100.00
Total				5,808.80

SUMMARY OF ESTIMATE FOR ROAD TO THE PINNACLES.

Mile No. 1	$8,062.10
Mile No. 2	8,397.10
Mile No. 3	6,243.20
Mile No. 4	7,028.60
Mile No. 5	5,808.80
	35,539.80
Engineering and contingencies, about 10 per cent	3,460.20
Total for road to The Pinnacles	$39,000.00

ESTIMATES IN DETAIL—Continued.

Estimate of road down Bear Creek.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 1:				
Excavation, class 1	6,921	Cubic yards	$0.30	$2,076.30
Macadam	1,080	.....do	3.80	4,104.00
Riprap	2,450	Square yards	.50	1,225.00
Clearing				250.00
Culverts				200.00
Total				7,855.30
Mile No. 2 (cliff opposite Cascade Spring):				
Excavation—				
Class 1	1,986	Cubic yards	.30	595.80
Class 2	6,381	.....do	.60	3,828.60
Class 3	3,171	.....do	1.00	3,171.00
Macadam	1,080	.....do	3.80	4,104.00
Riprap	2,750	Square yards	.50	1,375.00
Clearing				250.00
Culverts				150.00
Total				13,474.40
Mile No. 3:				
Excavation, class 1	5,037	Cubic yards	.30	1,511.10
Macadam	1,080	.....do	3.80	4,104.00
Riprap	1,700	Square yards	.50	850.00
Clearing				150.00
Culverts				100.00
Total				6,715.10
Mile No. 4:				
Excavation, class 1	4,011	Cubic yards	.30	1,203.30
Macadam	1,080	.....do	3.80	4,104.00
Riprap	1,700	Square yards	.50	850.00
Clearing				50.00
Culverts				100.00
Total				6,307.30
Mile No. 5 (580 feet long):				
Excavation, class 1	2,250	Cubic yards	.30	675.00
Macadam	118	.....do	3.80	448.40
Riprap	500	Square yards	.50	250.00
Clearing				20.00
Total				1,393.40

SUMMARY OF ESTIMATE FOR BEAR CREEK ROAD.

Mile No. 1	$7,855.30
Mile No. 2	13,474.40
Mile No. 3	6,715.10
Mile No. 4	6,307.30
Mile No. 5 (580 feet long)	1,393.40
	35,745.50
Engineering, contingencies, etc., about 10 per cent	3,254.50
Total for Bear Creek Road	39,000.00

Estimates in Detail—Continued.

Estimate of road to Fort Klamath Entrance.

	Quantity.	Unit.	Rate.	Amount.
Mile No. 1 (beginning in mile 30-31, Rim Road):				
Excavation, class 1	4,619	Cubic yards	$0.30	$1,385.70
Macadam	1,080	....do	3.80	4,104.00
Clearing				150.00
Culverts				200.00
Total				5,839.70
Mile No. 2:				
Excavation, class 1	2,472	Cubic yards	.30	741.60
Macadam	1,080	....do	3.80	4,104.00
Trestle bridge	65	Linear feet	6.00	390.00
Clearing				200.00
Culverts				150.00
Total				5,585.60
Mile No. 3:				
Excavation—				
Class 1	8,635	Cubic yards	.30	2,590.50
Class 2	1,248	....do	.60	748.80
Class 3	620	....do	1.00	620.00
Macadam	1,080	....do	3.80	4,104.00
Riprap	2,200	Square yards	.50	1,100.00
Clearing				225.00
Culverts				200.00
Total				9,588.30
Miles 4 to 10½, inclusive	7½	Miles	6,000	45,000.00

SUMMARY OF ESTIMATE OF ROAD TO FORT KLAMATH ENTRANCE.

Mile No. 1	$5,839.70
Mile No. 2	5,585.60
Mile No. 3	9,588.30
Miles 4 to 10½	45,000.00
	66,013.60
Engineering, contingencies, etc., about 10 per cent	6,986.40
Total for 10½ miles	73,000.00

Estimate of road from headquarters to Medford entrance.

6½ miles (estimated at $6,500 per mile)	$42,250.00
Engineering, contingencies, etc., about 10 per cent	4,750.00
Total	47,000.00

Summary of total road work.

	Miles.	Amount.
Rim Road	35.6	$429,000
Road to The Pinnacles	5.0	39,000
Road down Bear Creek	4.1	39,000
Road to Fort Klamath entrance	10.5	73,000
Road to Medford entrance	6.5	47,000
Total for all roads (averaging $10,162 per mile)	61.7	627,000

Estimate for trails.

100 miles of trails, at $150 per mile	$15,000

ESTIMATE FOR WATER SUPPLY.

The Rim Road can be supplied with water only with extreme difficulty. The question of water on the approaches is comparatively simple. It is estimated that a system of providing tanks and supply pipe for water, so that the road can be kept watered by carts during the season, will cost $65,000.

MAINTENANCE.

It is estimated that after completion of the work an appropriation of $20,000 annually will be required for repairs and maintenance, including sprinkling.

These estimates may appear high, but experience in road work in Yellowstone and Rainier National Parks, where conditions are not dissimilar, have proven that remoteness, short season due to altitude, and high cost of labor and supplies, will all operate to increase the cost of construction. It is believed the estimates are not higher than is required for the character of work desired.

RATE OF PROGRESS AND PLAN PROPOSED.

It is believed that completion of the roads in the park, as herein outlined, can be best and most economically effected by a plan about as follows:

The approach from Fort Klamath to the rim of the lake at the present lodge of the Crater Lake Co. should be first constructed by grading only, and then the grading of the Rim Road from the lodge to near Round Top (about 20 miles) should be completed. (The principal hotel of the Crater Lake Co. will ultimately be located on the Rim Road near Round Top.) After completion of this work, if the Natron cut-off is completed, the Bear Creek road should be graded and the Medford approach graded. These roads should then be improved by surfacing while the remainder of the Rim Road is being graded. The road to The Pinnacles should be undertaken last of all the road work, as a wagon trail can be easily opened up for use during the early work.

The initial appropriation for the work should be about $100,000 to provide plant, shelter, and camp buildings and stores, in addition to a working fund. For the succeeding two years the annual appropriation should be about $75,000, after which time it should be increased to about $100,000 annually, provided the Natron cut-off is completed, as is anticipated. Under this plan it will require about seven years to complete the work, but the grading from the Klamath entrance to the Bear Creek entrance, including about 20 miles of the Rim Road connecting the two establishments of the Crater Lake Co., together with considerable of the surfacing of this much of the road system, would be completed in three working seasons, and all of this road, together with the Medford entrance, could be graded and surfaced by the end of the fourth season.

It is the opinion of this office that as much of this work as possible should be completed prior to the San Francisco exposition of 1915. If this is done, a visit to this park will be one of the favorite side trips, especially as it can be included with a loss of but one day and at little expense by all tourists making the trip via Portland. More rapid progress than outlined above could be made if the work were authorized under some such system as the continuing-contract system used in some of the river and harbor work.

In closing this report this office desires to state that the improvement outlined herein is an exceptionally worthy one. It is doubtful if any view existing in the world to-day is as impressive and at the same time as beautiful as the view of this lake from its rim. Hundreds of people make the trip now year after year under adverse conditions for the pleasure of this view, and as the railroad approach is improved, as it shortly will be, the park should be made as accessible as possible for the thousands of tourists that annually travel between San Francisco and Portland.

It is desired also to acknowledge the courtesy of helpful advance sheets of survey furnished by the United States Geological Survey and assistance in numerous ways rendered by Mr. Arant, superintendent of the park, and Messrs. Will G. Steel and A. L. Parkhurst, of the Crater Lake Co.

Respectfully submitted.

JAY J. MORROW,
Major, Corps of Engineers, U. S. Army.

(Through the Division Engineer, Northern Pacific Division.)

O

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 329.

AUTHORITY TO RECEIVE CERTIFIED CHECKS FOR ALL PUBLIC DUES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

SUBMITTING,

WITH FAVORABLE RECOMMENDATION, DRAFT OF A BILL TO EXTEND THE AUTHORITY TO RECEIVE CERTIFIED CHECKS DRAWN ON NATIONAL AND STATE BANKS AND TRUST COMPANIES IN PAYMENT OF ALL PUBLIC DUES.

December 19, 1911.—Referred to the Committee on Ways and Means and ordered to be printed.

Treasury Department,
Office of the Secretary,
Washington, December 18, 1911.

The Speaker of the House of Representatives.

Sir: Under the act of March 2, 1911, Public No. 44, collectors of customs and of internal revenue are authorized to receive for duties on imports and internal taxes certified checks drawn on national and State banks and trust companies. The operation of this law has resulted in great convenience, both to the public and to the Government, but it has also strongly commended the desirability of extending the authority to receive such certified checks in payment for all public dues, which would cover payments of tonnage tax on vessels, deposits on account of head tax of alien passengers or immigrants in transit through the United States pending proof of their having passed without the United States, deposits of proceeds of sales of abandoned and unclaimed property and sales of seizures under customs laws, deposits to secure immediate landing and delivery of tropical fruits, etc.

I therefore have the honor to transmit a draft of a proposed bill amending the act of March 2, 1911, accordingly, and it is earnestly recommended that it receive the favorable consideration of the Congress.

Respectfully, yours,

FRANKLIN MACVEAGH,
Secretary.

AN ACT To extend the authority to receive certified checks drawn on National and State banks and trust companies in payment for duties on imports and internal taxes to all public dues.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be lawful for collecting officers to receive certified checks drawn on National and State banks and trust companies during such time and under such regulations as the Secretary of the Treasury may prescribe in payment for duties on imports, internal taxes, and all public dues, including special customs deposits, and the act of March second, nineteen hundred and eleven, entitled "An act to authorize the receipt of certified checks for duties on imports and internal taxes," is hereby amended accordingly.

O

62D CONGRESS, } HOUSE OF REPRESENTATIVES. { DOCUMENT
2d Session. } { No. 330.

ADMINISTRATION OF OATHS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

SUBMITTING

DRAFT OF A BILL, WITH FAVORABLE RECOMMENDATION, TO PROVIDE FOR THE ADMINISTERING OF OATHS BY CERTAIN PUBLIC OFFICERS.

DECEMBER 19, 1911.—Referred to the Committee on the Judiciary and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, December 18, 1911.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a revised draft of a bill relative to legislation in regard to the administering of oaths by certain Government officials and employees. This matter was first presented to the Congress in my letter of February 3, 1911, House Document No. 1357, Sixty-first Congress, third session, and again on May 1, 1911, House Document No. 44, Sixty-second Congress, first session, and was introduced in the House (H. R. 32726) on February 11, 1911. Since that time, however, it has seemed advisable to reduce the number of employees to be given this authority, limiting it to postmasters, assistant postmasters, and chiefs and assistant chiefs of any parties engaged in field work, and the inclosed draft of a bill has been prepared making this modification.

Inasmuch as this legislation if enacted will result in a considerable saving to the Government annually, it is earnestly recommended that the matter receive favorable consideration at the present session of Congress.

Respectfully,

FRANKLIN MACVEAGH,
Secretary.

A BILL To provide for the administering of oaths by certain public officers.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter when any officer or employee of the United States is required by law or regulation to make affidavit or affirmation in connection with the rendition of any account or claim against the United States, such oath or affirmation may be administered by any postmaster, assistant postmaster, or the chief or assistant chief of any party engaged in field work, and such postmasters, assistant postmasters, or chiefs or assistant chiefs of parties engaged in field work are hereby authorized to administer all oaths required by section thirty-seven hundred and forty-five, Revised Statutes, and such persons are hereby empowered and required to administer and certify such oaths or affirmations without fees or charges therefor. Oaths or affirmations so taken and certified shall have the same validity as if taken before an officer empowered to administer oaths generally.

O

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 331.

LEGISLATION RELATIVE TO SINKING FUND.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

CALLING ATTENTION TO

FORMER RECOMMENDATIONS OF THE DEPARTMENT FOR LEGISLATION RELATIVE TO THE SINKING FUND AND AGAIN RECOMMENDING SUCH LEGISLATION.

December 19, 1911.—Referred to the Committee on Ways and Means and ordered to be printed.

Treasury Department,
Office of the Secretary,
Washington, December 18, 1911.

The Speaker of the House of Representatives.

Sir: I have the honor to invite your attention to my letters of February 1 and May 1, 1911, printed as Documents No. 1356, Sixty-first Congress, third session, and No. 43, Sixty-second Congress, first session, recommending the repeal of existing legislation with regard to the sinking fund and the substitution therefor of legislation more consonant with the actual conditions and accepted practice, which letters were referred to the Committee on Ways and Means. The legislation proposed by this department was embodied in Senate bills 10898, of the Sixty-first Congress, third session, and 2151 of the Sixty-second Congress, first session.

Inasmuch as the desired legislation was not granted at the last two sessions of Congress, I have the honor to recommend that the matter be given prompt consideration at the present session in order that the necessary legislation may be secured.

Respectfully, yours,

Franklin MacVeagh,
Secretary.

O

62d Congress } HOUSE OF REPRESENTATIVES { Document
2d Session } { No. 343

MESSAGE

OF THE PRESIDENT OF THE UNITED STATES

ON

The Financial Condition of the Treasury
Needed Banking and Currency Reform
and Departmental Questions

COMMUNICATED TO THE
TWO HOUSES OF CONGRESS
DECEMBER 21, 1911

DECEMBER 21, 1911
Committed to the Committee of the Whole House on the state of
the Union and ordered to be printed

WASHINGTON
1911

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

MESSAGE OF THE PRESIDENT.

To the Senate and House of Representatives:

The financial condition of the Government, as shown at the close of the last fiscal year, June 30, 1911, was very satisfactory. The ordinary receipts into the general fund, excluding postal revenues, amounted to $701,372,374.99, and the disbursements from the general fund for current expenses and capital outlays, excluding postal and Panama Canal disbursements, including the interest on the public debt, amounted to $654,137,907.89, leaving a surplus of $47,234,377.10.

The postal revenue receipts amounted to $237,879,823.60, while the payments made for the postal service from the postal revenues amounted to $237,660,705.48, which left a surplus of postal receipts over disbursements of $219,118.12, the first time in 27 years in which a surplus occurred.

The interest-bearing debt of the United States June 30, 1911, amounted to $915,353,190. The debt on which interest had ceased amounted to $1,879,830.26, and the debt bearing no interest, including greenbacks, national bank notes to be redeemed, and fractional currency, amounted to $386,751,917.43, or a total of interest and noninterest bearing debt amounting to $1,303,984,937.69.

The actual disbursements, exclusive of those for the Panama Canal and for the postal service for the year ending June 30, 1911, were $654,137,997.89. The actual disbursements for the year ending June 30, 1910, exclusive of the Panama Canal and the postal service disbursements, were $659,705,391.08, making a decrease of $5,567,393.19 in yearly expenditures in the year 1911 under that of 1910. For the year ending June 30, 1912, the estimated receipts, exclusive of the postal revenues, are $666,000,000, while the total estimates, exclusive of those for the Panama Canal and the postal expenditures payable from the postal revenues, amount to $645,842,799.34. This is a decrease in the 1912 estimates from that of the 1911 estimates of $1,534,367.22.

For the year ending June 30, 1913, the estimated receipts, exclusive of the postal revenues, are $667,000,000, while the total estimated appropriations, exclusive of the Panama Canal and postal disbursements payable from postal revenues, will amount to $637,920,803.35. This is a decrease in the 1913 estimates from that of the 1912 estimates of $7,921,995.99.

As to the postal revenues, the expansion of the business in that department, the normal increase in the Post Office and the extension of the service, will increase the outlay to the sum of $260,938,463; but as the department was self-sustaining this year the Postmaster General is assured that next year the receipts will at least equal the expenditures, and probably exceed them by more than the surplus of this year. It is fair and equitable, therefore, in determining the economy with which the Government has been run, to exclude the transactions of a department like the Post Office Department, which relies for its support upon its receipts. In calculations heretofore made for comparison of economy in each year, it has been the proper custom only to include in the statement the deficit in the Post Office Department which was paid out of the Treasury.

A calculation of the actual increase in the expenses of Government arising from the increase in the population and the general expansion of governmental functions, except those of the Post Office, for a number of years shows a normal increase of about 4 per cent a year. By directing the exercise of great care to keep down the expenses and the estimates we have succeeded in reducing the total disbursements each year.

THE CREDIT OF THE UNITED STATES.

The credit of this Government was shown to be better than that of any other Government by the sale of the Panama Canal 3 per cent bonds. These bonds did not give their owners the privilege of using them as a basis for bank-note circulation, nor was there any other privilege extended to them which would affect their general market value. Their sale, therefore, measured the credit of the Government. The premium which was realized upon the bonds made the actual interest rate of the transaction 2.909 per cent.

EFFICIENCY AND ECONOMY IN THE TREASURY DEPARTMENT.

In the Treasury Department the efficiency and economy work has been kept steadily up. Provision is made for the elimination of 134 positions during the coming year. Two hundred and sixty-seven statutory positions were eliminated during the last year in the office of the Treasury in Washington, and 141 positions in the year 1910, making an elimination of 542 statutory positions since March 4, 1909; and this has been done without the discharge of anybody, because the normal resignations and deaths have been equal to the elimination of the places, a system of transfers having taken care of the persons whose positions were dropped out. In the field service of the department, too, 1,259 positions have been eliminated down to the present time, making a total net reduction of all Treasury positions to the number of 1,801. Meantime the efficiency of the work of the department has increased.

MONETARY REFORM.

A matter of first importance that will come before Congress for action at this session is monetary reform. The Congress has itself arranged an early introduction of this great question through the report of its Monetary Commission. This commission was appointed to recommend a solution of the banking and currency problems so long confronting the Nation and to furnish the facts and data necessary to enable the Congress to take action. The commission was appointed when an impressive and urgent popular demand for legislative relief suddenly arose out of the distressing situation of the people caused by the deplorable panic of 1907. The Congress decided that while it could not give immediately the relief required, it would provide a commission to furnish the means for prompt action at a later date.

In order to do its work with thoroughness and precision this commission has taken some time to make its report. The country is undoubtedly hoping for as prompt action on the report as the convenience of the Congress can permit. The recognition of the gross imperfections and marked inadequacy of our banking and currency system even in our most quiet financial periods is of long standing; and later there has matured a recognition of the fact that our system is responsible for the extraordinary devastation, waste, and business paralysis of our recurring periods of panic. Though the members of the Monetary Commission have for a considerable time been working in the open, and while large numbers of the people have been openly working with them, and while the press has largely noted and discussed this work as it has proceeded, so that the report of the commission promises to represent a national movement, the details of the report are still being considered. I can not, therefore, do much more at this time than commend the immense importance of monetary reform, urge prompt consideration and action when the commission's report is received, and express my satisfaction that the plan to be proposed promises to embrace main features that, having met the approval of a great preponderance of the practical and professional opinion of the country, are likely to meet equal approval in Congress.

It is exceedingly fortunate that the wise and undisputed policy of maintaining unchanged the main features of our banking system rendered it at once impossible to introduce a central bank; for a central bank would certainly have been resisted, and a plan into which it could have been introduced would probably have been defeated. But as a central bank could not be a part of the only plan discussed or considered, that troublesome question is eliminated. And ingenious and novel as the proposed National Reserve Association appears, it simply is a logical outgrowth of what is best in our present system, and is, in fact, the fulfillment of that system.

Exactly how the management of that association should be organized is a question still open. It seems to be desirable that the banks which would own the association should in the main manage it. It will be an agency of the banks to act for them, and they can be trusted better than anybody else chiefly to conduct it. It is mainly bankers' work. But there must be some form of Government supervision and ultimate control, and I favor a reasonable representation of the Government in the management. I entertain no fear of the introduction of politics or of any undesirable influences from a properly measured Government representation.

I trust that all banks of the country possessing the requisite standards will be placed upon a footing of perfect equality of opportunity. Both the National system and the State system should be fairly recognized, leaving them eventually to coalesce if that shall prove to be their tendency. But such evolution can not develop impartially if the banks of one system are given or permitted any advantages of opportunity over those of the other system. And I trust also that the new legislation will carefully and completely protect and assure the individuality and the independence of each bank, to the end that any tendency there may ever be toward a consolidation of the money or banking power of the Nation shall be defeated.

It will always be possible, of course, to correct any features of the new law which may in practice prove to be unwise; so that while this law is sure to be enacted under conditions of unusual knowledge and authority, it also will include, it is well to remember, the possibility of future amendment.

With the present prospects of this long-awaited reform encouraging us, it would be singularly unfortunate if this monetary question should by any chance become a party issue. And I sincerely hope it will not. The exceeding amount of consideration it has received from the people of the Nation has been wholly nonpartisan; and the Congress set its nonpartisan seal upon it when the Monetary Commission was appointed. In commending the question to the favorable consideration of Congress, I speak for, and in the spirit of, the great number of my fellow citizens who without any thought of party or partisanship feel with remarkable earnestness that this reform is necessary to the interests of all the people.

THE WAR DEPARTMENT.

There is now before Congress a bill, the purpose of which is to increase the efficiency and decrease the expense of the Army. It contains four principal features: First, a consolidation of the General Staff with The Adjutant General's and the Inspector General's Departments; second, a consolidation of the Quartermaster's Department with the Subsistence and the Pay Departments; third, the creation of an Army Service Corps; and fourth, an extension of the enlistment period from three to five years.

With the establishment of an Army Service Corps, as proposed in the bill, I am thoroughly in accord and am convinced that the establishment of such a corps will result in a material economy and a very great increase of efficiency in the Army. It has repeatedly been recommended by me and my predecessors. I also believe that a consolidation of the Staff Corps can be made with a resulting increase in efficiency and economy, but not along the lines provided in the bill under consideration.

I am opposed to any plan the result of which would be to break up or interfere with the essential principles of the detail system in the Staff Corps established by the act of February 2, 1901, and I am opposed to any plan the result of which would be to give to the officer selected as Chief of Staff or to any other member of the General Staff Corps greater permanency of office than he now has. Under the existing law neither the Chief of Staff nor any other member of the General Staff Corps can remain in office for a period of more than four years, and there must be an interval of two years between successive tours of duty.

The bill referred to provides that certain persons shall become permanent members of the General Staff Corps, and that certain others are subject to redetail without an interval of two years. Such provision is fraught with danger to the welfare of the Army, and would practically nullify the main purpose of the law creating the General Staff.

In making the consolidations no reduction should be made in the total number of officers of the Army, of whom there are now too few to perform the duties imposed by law. I have in the past recommended an increase in the number of officers by 600 in order to provide sufficient officers to perform all classes of staff duty and to reduce the number of line officers detached from their commands. Congress at the last session increased the total number of officers by 200, but this is not enough. Promotion in the line of the Army is too slow. Officers do not attain command rank at an age early enough properly to exercise it. It would be a mistake further to retard this already slow promotion by throwing back into the line of the Army a number of high-ranking officers to be absorbed as is provided in the proposed plan of consolidation.

Another feature of the bill which I believe to be a mistake is the proposed increase in the term of enlistment from three to five years. I believe it would be better to enlist men for six years, release them at the end of three years from active service, and put them in reserve for the remaining three years. Reenlistments should be largely confined to the noncommissioned officers and other enlisted men in the skilled grades. This plan, by the payment of a comparatively small compensation during the three years of reserve, would keep a large body of men at the call of the Government, trained and ready for service, and able to meet any exigency.

The Army of the United States is in good condition. It showed itself able to meet an emergency in the successful mobilization of an army division of from 15,000 to 20,000 men, which took place along the border of Mexico during the recent disturbances in that country. The marvelous freedom from the ordinary camp diseases of typhoid fever and measles is referred to in the report of the Secretary of War, and shows such an effectiveness in the sanitary regulations and treatment of the Medical Corps, and in the discipline of the Army itself, as to invoke the highest commendation.

MEMORIAL AMPHITHEATER AT ARLINGTON.

I beg to renew my recommendation of last year that the Congress appropriate for a memorial amphitheater at Arlington, Va., the funds required to construct it upon the plans already approved.

THE PANAMA CANAL.

The very satisfactory progress made on the Panama Canal last year has continued, and there is every reason to believe that the canal will be completed as early as the 1st of July, 1913, unless something unforeseen occurs. This is about 18 months before the time promised by the engineers.

We are now near enough the completion of the canal to make it imperatively necessary that legislation should be enacted to fix the method by which the canal shall be maintained and controlled and the zone governed. The fact is that to-day there is no statutory law by authority of which the President is maintaining the government of the zone. Such authority was given in an amendment to the Spooner Act, which expired by the terms of its own limitation some years ago. Since that time the government has continued, under the advice of the Attorney General that in the absence of action by Congress, there is necessarily an implied authority on the part of the Executive to maintain a government in a territory in which he has to see that the laws are executed. The fact that we have been able thus to get along during the important days of construction without legislation expressly formulating the government of the zone, or delegating the creation of it to the President, is not a reason for supposing that we may continue the same kind of a government after the construction is finished. The implied authority of the President to maintain a civil government in the zone may be derived from the mandatory direction given him in the original Spooner Act, by which he was commanded to build the canal; but certainly, now that the canal is about to be completed and to be put under a permanent management, there ought to be specific statutory authority for its regulation and control and for the government of the zone, which we hold for the chief and main purpose of operating the canal.

I fully concur with the Secretary of War that the problem is simply the management of a great public work, and not the government of a local republic; that every provision must be directed toward the successful maintenance of the canal as an avenue of commerce, and that all provisions for the government of those who live within the zone should be subordinate to the main purpose.

The zone is 40 miles long and 10 miles wide. Now, it has a population of 50,000 or 60,000, but as soon as the work of construction is completed, the towns which make up this population will be deserted, and only comparatively few natives will continue their residence there. The control of them ought to approximate a military government. One judge and two justices of the peace will be sufficient to attend to all the judicial and litigated business there is. With a few fundamental laws of Congress, the zone should be governed by the orders of the President, issued through the War Department, as it is to-day. Provisions can be made for the guaranties of life, liberty, and property, but beyond those, the government should be that of a military reservation, managed in connection with this great highway of trade.

FURNISHING SUPPLIES AND REPAIRS.

In my last annual message I discussed at length the reasons for the Government's assuming the task of furnishing to all ships that use the canal, whether our own naval vessels or others, the supplies of coal and oil and other necessities with which they must be replenished either before or after passing through the canal, together with the dock facilities and repairs of every character. This it is thought wise to do through the Government, because the Government must establish for itself, for its own naval vessels, large depots and dry docks and warehouses, and these may easily be enlarged so as to secure to the world public using the canal reasonable prices and a certainty that there will be no discrimination between those who wish to avail themselves of such facilities.

TOLLS.

I renew my recommendation with respect to the tolls of the canal that within limits, which shall seem wise to Congress, the power of fixing tolls be given to the President. In order to arrive at a proper conclusion, there must be some experimenting, and this can not be done if Congress does not delegate the power to one who can act expeditiously.

POWER EXISTS TO RELIEVE AMERICAN SHIPPING.

I am very confident that the United States has the power to relieve from the payment of tolls any part of our shipping that Congress deems wise. We own the canal. It was our money that built it. We have the right to charge tolls for its use. Those tolls must be the same to everyone; but when we are dealing with our own ships, the practice of many Governments of subsidizing their own merchant vessels is so well established in general that a subsidy equal to the tolls, an equivalent remission of tolls, can not be held to be a discrimination in the use of the canal. The practice in the Suez Canal makes this clear. The experiment in tolls to be made by the President would doubtless disclose how great a burden of tolls the coastwise trade between the Atlantic and the Pacific coast could bear without preventing its usefulness in competition with the transcontinental railroads. One of the chief reasons for building the canal was to set up this competition and to bring the two shores closer together as a practical trade problem. It may be that the tolls will have to be wholly remitted. I do not think this is the best principle, because I believe that the cost of such a Government work as the Panama Canal ought to be imposed gradually but certainly upon the trade which it creates and makes possible. So far as we can, consistent with the development of the world's trade through the canal, and the benefit which it was intended to secure to the east and west coastwise trade, we ought to labor to secure from the canal tolls a sufficient amount ultimately to meet the debt which we have assumed and to pay the interest.

THE PHILIPPINE ISLANDS.

In respect to the Philippines, I urgently join in the recommendation of the Secretary of War that the act of February 6, 1905, limiting the indebtedness that may be incurred by the Philippine Government for the construction of public works, be increased from $5,000,000 to $15,000,000. The finances of that Government are in excellent condition. The maximum sum mentioned is quite low as compared with the amount of indebtedness of other governments with similar resources, and the success which has attended the expenditure of the $5,000,000 in the useful improvements of the harbors and other places in the Islands justifies and requires additional expenditures for like purposes.

NATURALIZATION.

I also join in the recommendation that the legislature of the Philippine Islands be authorized to provide for the naturalization of Filipinos and others who by the present law are treated as aliens, so as to enable them to become citizens of the Philippine Islands.

FRIARS' LANDS.

Pending an investigation by Congress at its last session, through one of its committees, into the disposition of the friars' lands, Secretary Dickinson directed that the friars' lands should not be sold in excess of the limits fixed for the public lands until Congress should pass upon the subject or should have concluded its investigation. This order has been an obstruction to the disposition of the lands, and I expect to direct the Secretary of War to return to the practice under the opinion of the Attorney General which will enable us to dispose of the lands much more promptly, and to prepare a sinking fund with which to meet the $7,000,000 of bonds issued for the purchase of the lands. I have no doubt whatever that the Attorney General's construction was a proper one, and that it is in the interest of everyone that the land shall be promptly disposed of. The danger of creating a monopoly of ownership in lands under the statutes as construed is nothing. There are only two tracts of 60,000 acres each unimproved and in remote Provinces that are likely to be disposed of in bulk, and the rest of the lands are subject to the limitation that they shall be first offered to the present tenants and lessors who hold them in small tracts.

RIVERS AND HARBORS.

The estimates for the river and harbor improvements reach $32,000,000 for the coming year. I wish to urge that whenever a project has been adopted by Congress as one to be completed, the more money which can be economically expended in its construction in each year, the greater the ultimate economy. This has especial application to the improvement of the Mississippi River and its large branches. It seems to me that an increase in the amount of money now being annually expended in the improvement of the Ohio River which has been formally adopted by Congress would be in the interest of the public. A similar change ought to be made during the present Congress, in the amount to be appropriated for the Missouri River. The engineers say that the cost of the improvement of the Missouri River from Kansas City to St. Louis, in order to secure 6 feet as a permanent channel, will reach $20,000,000. There have been at least three recommendations from the Chief of Engineers that if the improvement be adopted, $2,000,000 should be expended upon it annually. This particular improvement is especially entitled to the attention of Congress, because a company has been organized in Kansas City, with a capital of $1,000,000, which has built steamers and barges, and is actually using the river for transportation in order to show what can be done in the way of affecting rates between Kansas City and St. Louis, and in order to manifest their good faith and confidence in respect of the improvement. I urgently recommend that the appropriation for this improvement be increased from $600,000, as recommended now in the completion of a contract, to $2,000,000 annually, so that the work may be done in 10 years.

WATERWAY FROM THE LAKES TO THE GULF.

The project for a navigable waterway from Lake Michigan to the mouth of the Illinois River, and thence via the Mississippi to the Gulf of Mexico, is one of national importance. In view of the work already accomplished by the Sanitary District of Chicago, an agency of the State of Illinois, which has constructed the most difficult and costly stretch of this waterway and made it an asset of the Nation, and in view of the fact that the people of Illinois have authorized the expenditure of $20,000,000 to carry this waterway 62 miles farther to Utica, I feel that it is fitting that this work should be supplemented by the Government, and that the expenditures recommended by the special board of engineers on the waterway from Utica to the mouth of the Illinois River be made upon lines which while providing a waterway for the Nation should otherwise benefit that State to the fullest extent. I recommend that the term of service of said special board of engineers be continued, and that it be empowered to reopen the question of the treatment of the lower Illinois River, and to negotiate with a properly constituted commission representing the State of Illinois, and to agree upon a plan for the improvement of the lower Illinois River and upon the extent to which the United States may properly cooperate with the State of Illinois in securing the construction of a navigable waterway from Lockport to the mouth of the Illinois River in conjunction with the development of water power by that State between Lockport and Utica.

THE DEPARTMENT OF JUSTICE.

Removal of clerks of Federal courts.

The report of the Attorney General shows that he has subjected to close examination the accounts of the clerks of the Federal courts; that he has found a good many which disclose irregularities or dishonesty; but that he has had considerable difficulty in securing an effective prosecution or removal of the clerks thus derelict. I am certainly not unduly prejudiced against the Federal courts, but the fact is that the long and confidential relations which grow out of the tenure for life on the part of the judge and the practical tenure for life on the part of the clerk are not calculated to secure the strictness of dealing by the judge with the clerk in respect to his fees and accounts which assures in the clerk's conduct a freedom from overcharges and carelessness. The relationship between the judge and the clerk makes it ungracious for members of the bar to complain of the clerk or for department examiners to make charges against him to be heard by the court, and an order of removal of a clerk and a judgment for the recovery of fees are in some cases reluctantly entered by the judge. For this reason I recommend an amendment to the law whereby the President shall be given power to remove the clerks for cause. This provision need not interfere with the right of the judge to appoint his clerk or to remove him.

French spoliation awards.

In my last message, I recommended to Congress that it authorize the payment of the findings or judgments of the Court of Claims in the matter of the French spoliation cases. There has been no appropriation to pay these judgments since 1905. The findings and awards were obtained after a very bitter fight, the Government succeeding in about 75 per cent of the cases. The amount of the awards ought, as a matter of good faith on the part of the Government, to be paid.

EMPLOYERS' LIABILITY AND WORKMEN'S COMPENSATION COMMISSION.

The limitation of the liability of the master to his servant for personal injuries to such as are occasioned by his fault has been abandoned in most civilized countries and provision made whereby the employee injured in the course of his employment is compensated for his loss of working ability irrespective of negligence. The principle upon which such provision proceeds is that accidental injuries to workmen in modern industry, with its vast complexity and inherent dangers arising from complicated machinery and the use of the great forces of steam and electricity, should be regarded as risks of the industry and the loss borne in some equitable proportion by those who for their own profit engage therein. In recognition of this the last Congress authorized the appointment of a commission to investigate the subject of employers' liability and workmen's compensation and to report the result of their investigations, through the President, to Congress. This commission was appointed and has been at work, holding hearings, gathering data, and considering the subject, and it is expected will be able to report by the first of the year, in accordance with the provisions of the law. It is hoped and expected that the commission will suggest legislation which will enable us to put in the place of the present wasteful and sometimes unjust system of employers' liability a plan of compensation which will afford some certain and definite relief to all employees who are injured in the course of their employment in those industries which are subject to the regulating power of Congress.

MEASURES TO PREVENT DELAY AND UNNECESSARY COST OF LITIGATION.

In promotion of the movement for the prevention of delay and unnecessary cost, in litigation, I am glad to say that the Supreme Court has taken steps to reform the present equity rules of the Federal courts, and that we may in the near future expect a revision of them which will be a long step in the right direction.

The American Bar Association has recommended to Congress several bills expediting procedure, one of which has already passed the House unanimously, February 6, 1911. This directs that no judgment should be set aside or reversed, or new trial granted, unless it appears to the court, after an examination of the entire cause, that the error complained of has injuriously affected the substantial rights of the parties, and also provides for the submission of issues of fact to a jury, reserving questions of law for subsequent argument and decision. I hope this bill will pass the Senate and become law, for it will simplify the procedure at law.

Another bill to amend chapter 11 of the Judicial Code, in order to avoid errors in pleading, was presented by the same association, and one enlarging the jurisdiction of the Supreme Court so as to permit that court to examine, upon a writ of error, all cases in which any right or title is claimed under the Constitution, or any statute or treaty of the United States, whether the decision in the court below has been against the right or title or in its favor. Both these measures are in the interest of justice and should be passed.

POST OFFICE.

At the beginning of the present administration in 1909 the postal service was in arrears to the extent of $17,479,770.47. It was very much the largest deficit on record. In the brief space of two years this has been turned into a surplus of $220,000, which has been accomplished without curtailment of the postal facilities, as may be seen by the fact that there have been established 3,744 new post offices; delivery by carrier has been added to the service in 186 cities; 2,516 new rural routes have been established, covering 60,000 miles; the force of postal employees has been increased in these two years by more than 8,000, and their average annual salary has had a substantial increase.

POSTAL-SAVINGS SYSTEM.

On January 3, 1911, postal-savings depositories were established experimentally in 48 States and Territories. After three months' successful operation the system was extended as rapidly as feasible to the 7,500 post offices of the first, second, and third classes constituting the presidential grade. By the end of the year practically all of these will have been designated and then the system will be extended to all fourth-class post offices doing a money-order business.

In selecting post offices for depositories consideration was given to the efficiency of the postmasters and only those offices where the ratings were satisfactory to the department have been designated. Withholding designation from postmasters with unsatisfactory ratings has had a salutary effect on the service.

The deposits have kept pace with the extension of the system. Amounting to only $60,652 at the end of the first month's operation in the experimental offices, they increased to $679,310 by July, and now after 11 months of operation have reached a total of $11,000,000. This sum is distributed among 2,710 banks and protected under the law by bonds deposited with the Treasurer of the United States.

Under the method adopted for the conduct of the system certificates are issued as evidence of deposits, and accounts with depositors are kept by the post offices instead of by the department. Compared with the practice in other countries of entering deposits in pass books and keeping at the central office a ledger account with each depositor, the use of the certificate has resulted in great economy of administration.

The depositors thus far number approximately 150,000. They include 40 nationalities, native Americans largely predominating and English and Italians coming next.

The first conversion of deposits into United States bonds bearing interest at the rate of 2½ per cent occurred on July 1, 1911, the amount of deposits exchanged being $41,900, or a little more than 6 per cent of the total outstanding certificates of deposit on June 30. Of this issue, bonds to the value of $6,120 were in coupon form and $35,780 in registered form.

PARCEL POST.

Steps should be taken immediately for the establishment of a rural parcel post. In the estimates of appropriations needed for the maintenance of the postal service for the ensuing fiscal year an item of $150,000 has been inserted to cover the preliminary expense of establishing a parcel post on rural mail routes, as well as to cover an investigation having for its object the final establishment of a general parcel post on all railway and steamboat transportation routes. The department believes that after the initial expenses of establishing the system are defrayed and the parcel post is in full operation on the rural routes it will not only bring in sufficient revenue to meet its cost, but also a surplus that can be utilized in paying the expenses of a parcel post in the City Delivery Service.

It is hoped that Congress will authorize the immediate establishment of a limited parcel post on such rural routes as may be selected, providing for the delivery along the routes of parcels not exceeding eleven pounds, which is the weight limit for the international parcel post, or at the post office from which such route emanates, or on another route emanating from the same office. Such preliminary service will prepare the way for the more thorough and comprehensive inquiry contemplated in asking for the appropriation mentioned, enable the department to gain definite information concerning the practical operation of a general system, and at the same time extend the benefit of the service to a class of people who, above all others, are specially in need of it.

The suggestion that we have a general parcel post has awakened great opposition on the part of some who think that it will have the effect to destroy the business of the country storekeeper. Instead of doing this, I think the change will greatly increase business for the benefit of all. The reduction in the cost of living it will bring about ought to make its coming certain.

THE NAVY DEPARTMENT.

On the 2d of November last, I reviewed the fighting fleet of battleships and other vessels assembled in New York Harbor, consisting of 24 battleships, 2 armored cruisers, 2 cruisers, 22 destroyers, 12 torpedo boats, 8 submarines, and other attendant vessels, making 98 vessels of all classes, of a tonnage of 576,634 tons. Those who saw the fleet were struck with its preparedness and with its high military efficiency. All Americans should be proud of its personnel.

The fleet was deficient in the number of torpedo destroyers, in cruisers, and in colliers, as well as in large battleship cruisers, which are now becoming a very important feature of foreign navies, notably the British, German, and Japanese.

The building plan for this year contemplates two battleships and two colliers. This is because the other and smaller vessels can be built much more rapidly in case of emergency than the battleships, and we certainly ought to continue the policy of two battleships a year until after the Panama Canal is finished and until in our first line and in our reserve line we can number 40 available vessels of proper armament and size.

The reorganization of the Navy and the appointment of four aids to the Secretary have continued to demonstrate their usefulness. It would be difficult now to administer the affairs of the Navy without the expert counsel and advice of these aids, and I renew the recommendation which I made last year, that the aids be recognized by statute.

It is certain that the Navy, with its present size, should have admirals in active command higher than rear admirals. The recognized grades in order are: Admiral of the fleet, admiral, vice admiral, and rear admiral. Our great battleship fleet is commanded by a rear admiral, with four other rear admirals under his orders. This is not as it should be, and when questions of precedence arise between our naval officers and those of European navies, the American rear admiral, though in command of ten times the force of a foreign vice admiral, must yield precedence to the latter. Such an absurdity ought not to prevail, and it can be avoided by the creation of two or three positions of flag rank above that of rear admiral.

I attended the opening of the new training school at North Chicago, Ill., and am glad to note the opportunity which this gives for drawing upon young men of the country from the interior, from farms, stores, shops, and offices, which insures a high average of intelligence and character among them, and which they showed in the very wonderful improvement in discipline and drill which only a few short weeks' presence at the naval station had made.

I invite your attention to the consideration of the new system of detention and of punishment for Army and Navy enlisted men which has obtained in Great Britain, and which has made greatly for the better control of the men. We should adopt a similar system here.

Like the Treasury Department and the War Department, the Navy Department has given much attention to economy in administration, and has cut down a number of unnecessary expenses and reduced its estimates except for construction and the increase that that involves.

I urge upon Congress the necessity for an immediate increase of 2,000 men in the enlisted strength of the Navy, provided for in the estimates. Four thousand more are now needed to man all the available vessels.

There are in the service to-day about 47,750 enlisted men of all ratings.

Careful computation shows that in April, 1912, 49,166 men will be required for vessels in commission, and 3,000 apprentice seamen should be kept under training at all times.

ABOLITION OF NAVY YARDS.

The Secretary of the Navy has recommended the abolition of certain of the smaller and unnecessary navy yards, and in order to furnish a complete and comprehensive report has referred the question of all navy yards to the joint board of the Army and Navy. This board will shortly make its report and the Secretary of the Navy advises me that his recommendations on the subject will be presented early in the coming year. The measure of economy contained in a proper handling of this subject is so great and so important to the interests of the Nation that I shall present it to Congress as a separate subject apart from my annual message. Concentration of the necessary work for naval vessels in a few navy yards on each coast is a vital necessity if proper economy in Government expenditures is to be attained.

AMALGAMATION OF STAFF CORPS IN THE NAVY.

The Secretary of the Navy is striving to unify the various corps of the Navy to the extent possible and thereby stimulate a Navy spirit as distinguished from a corps spirit. In this he has my warm support.

All officers are to be naval officers first and specialists afterwards. This means that officers will take up at least one specialty, such as ordnance, construction, or engineering. This is practically what is done now, only some of the specialists, like the pay officers and naval constructors, are not of the line. It is proposed to make them all of the line.

All combatant corps should obviously be of the line. This necessitates amalgamating the pay officers and also those engaged in the technical work of producing the finished ship. This is at present the case with the single exception of the naval constructors, whom it is now proposed to amalgamate with the line.

COUNCIL OF NATIONAL DEFENSE.

I urge again upon Congress the desirability of establishing the council of national defense. The bill to establish this council was before Congress last winter, and it is hoped that this legislation will pass during the present session. The purpose of the council is to determine the general policy of national defense and to recommend to Congress and to the President such measures relating to it as it shall deem necessary and expedient.

No such machinery is now provided by which the readiness of the Army and Navy may be improved and the programs of military and naval requirements shall be coordinated and properly scrutinized with a view to the necessities of the whole Nation rather than of separate departments.

DEPARTMENTS OF AGRICULTURE AND COMMERCE AND LABOR.

For the consideration of matters which are pending or have been disposed of in the Agricultural Department and in the Department of Commerce and Labor, I refer to the very excellent reports of the Secretaries of those departments. I shall not be able to submit to Congress until after the Christmas holidays the question of conservation of our resources arising in Alaska and the West and the question of the rate for second-class mail matter in the Post Office Department.

COMMISSION ON EFFICIENCY AND ECONOMY.

The law does not require the submission of the reports of the Commission on Economy and Efficiency until the 31st of December. I shall therefore not be able to submit a report of the work of that commission until the assembling of Congress after the holidays.

CIVIL RETIREMENT AND CONTRIBUTORY PENSION SYSTEM.

I have already advocated, in my last annual message, the adoption of a civil-service retirement system, with a contributory feature to it so as to reduce to a minimum the cost to the Government of the pensions to be paid. After considerable reflection, I am very much opposed to a pension system that involves no contribution from the employees. I think the experience of other governments justifies this view; but the crying necessity for some such contributory system, with possibly a preliminary governmental outlay, in order to cover the initial cost and to set the system going at once while the contributions are accumulating, is manifest on every side. Nothing will so much promote the economy and efficiency of the Government as such a system.

ELIMINATION OF ALL LOCAL OFFICES FROM POLITICS.

I wish to renew again my recommendation that all the local offices throughout the country, including collectors of internal revenue, collectors of customs, postmasters of all four classes, immigration commissioners and marshals, should be by law covered into the classified service, the necessity for confirmation by the Senate be removed, and the President and the others, whose time is now taken up in distributing this patronage under the custom that has prevailed since the beginning of the Government in accordance with the recommendation of the Senators and Congressmen of the majority party should be relieved from this burden. I am confident that such a change would greatly reduce the cost of administering the Government, and that it would add greatly to its efficiency. It would take away the power to use the patronage of the Government for political purposes. When officers are recommended by Senators and Congressmen from political motives and for political services rendered, it is impossible to expect that while in office the appointees will not regard their tenure as more or less dependent upon continued political service for their patrons, and no regulations, however stiff or rigid, will prevent this, because such regulations, in view of the method and motive for selection, are plainly inconsistent and deemed hardly worthy of respect.

WM. H. TAFT.

THE WHITE HOUSE, *December 21, 1911.*

CONSTRUCTION OF WAGON ROAD, YAKIMA RESERVATION.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

SUBMITTING

REPORT ON THE ADVISABILITY OF CONSTRUCTING WAGON ROADS ON THE YAKIMA INDIAN RESERVATION, UNDER SECTION 23 OF THE INDIAN APPROPRIATION ACT APPROVED MARCH 3, 1911.

JANUARY 3, 1912.—Referred to the Committee on Indian Affairs and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
Washington, December 20, 1911.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: Section 23 of the Indian appropriation act, approved March 3, 1911 (36 Stat. L., 1058, 1075), contains the provision:

> The Secretary of the Interior is hereby authorized to investigate and to report to Congress at its next session the necessity or advisability of constructing wagon roads on the Yakima Indian Reservation, the cost thereof to be reimbursed out of the proceeds of the sale of surplus lands of such reservation. If he shall find the construction of such roads to be necessary or advisable, he shall submit specific recommendations in respect to the kind of roads to be constructed, their location and extent, together with an estimate of cost for the same.

I have the honor to report that an investigation of the matter has been made, and, for the reasons hereinafter given, it is not believed necessary or advisable to construct wagon roads on the Yakima Indian Reservation if the reimbursement of the cost thereof is to be made out of the proceeds of the sale of surplus lands of the reservation.

Under date of December 13, 1910, there was submitted to the department a petition of the Wapato Commercial Club of Wapato, Wash., in which there was set forth the condition of the roads on the Yakima Reservation and the fact that the Indian lands were not subject to taxation by the State; and the petition urged an appropriation of $100,000 to be expended in repairing and placing in condition for travel the main highways on the Yakima Reservation. The department advised the secretary of the club that it had no funds at its disposal which could be used for the extensive repair of roads, as contemplated by the association, and that it would make an investigation to ascertain whether any relief could be afforded by the use of Indian labor for repair work where most needed. Subsequently, the superintendent in charge of the reservation was authorized to expend $5,000 in the employment of labor and purchase of material to repair the roads.

On January 13, 1911, there was introduced in the Senate a proposed amendment to H. R. 28406 (the Indian appropriation bill) providing:

> For the construction and improvement of wagon roads on the Yakima Indian Reservation, $100,000, to be reimbursable out of the proceeds from sales of surplus lands of said reservation.

An earnest protest was made against the proposed legislation by the Indians of the Yakima Reservation in a petition addressed to the Commissioner of Indian Affairs, copies of which were sent to the chairman of the Committee on Indian Affairs, United States Senate, the chairman of the Committee on Indian Affairs, House of Representatives, and Hon. W. L. Jones, United States Senator from Washington, under date of February 10, 1911. The amendment was not adopted.

On March 25, 1911, the Indian Office, with the approval of the department, wrote to the superintendent in charge of the Yakima Reservation, setting forth the nature of the investigation to be made under the instructions contained in section 23 of the act of March 3, 1911, supra.

In his letter of July 7, 1911, to the Indian Office the superintendent reported that public sentiment had undergone a material change since the petition urging the appropriation of $100,000 had been forwarded by the Wapato Commercial Club; that it was the feeling of the commercial club that the contemplated appropriation would be made as a gratuity and not charged against the Indians; and that, in view of the fact that the expenditure of so large a sum from tribal funds would greatly reduce the amount which would be finally available for irrigation and drainage, the citizens who originally petitioned for the appropriation had passed resolutions asking that the petition be disregarded. The superintendent submitted with his report a copy of resolutions adopted by a committee appointed for the purpose at a mass meeting of the water users on the Yakima Reservation, held on April 20, 1911, in which the request was made that the petition forwarded to the department and representatives in Congress asking for an appropriation of $100,000 be recalled and no further action taken in the matter, either by the department or by Congress, and that this action was taken with a view to hastening the commencement of operations on the Wapato irrigation project and also for the reason that the initial intent of the petition was not to tax the proposed road improvements to the tribal funds of the Yakima Indians.

The department does not believe that it would be warranted in expending so large a part of Indian funds for the purpose of road improvement; neither would it be fair to the Indians. Such a use of tribal funds would be in the nature of forcing taxation upon the Indian which was not contemplated by the allotment act. The Indians have bitterly opposed legislation of this character and feel that they should be consulted and their consent obtained to such an appropriation.

There are enclosed copies of Indian Office letter of March 25, 1911, approved by the department on March 27, 1911, to the superintendent, the superintendent's report of July 7, 1911, and resolutions adopted by the committee of the water users' association referred to herein.

Respectfully,
WALTER L. FISHER,
Secretary.

MARCH 25, 1911.

Mr. S. A. M. YOUNG,
Superintendent Yakima Indian School,
Fort Simcoe, Wash.

SIR: Section 23 of the Indian appropriation act for the fiscal year 1912, approved March 3, 1911 (Public, No. 454), contains the following provision:

> The Secretary of the Interior is hereby authorized to investigate and to report to Congress at its next session the necessity or advisability of constructing wagon roads on the Yakima Indian Reservation, the cost thereof to be reimbursed out of the proceeds of the sale of surplus lands of such reservation. If he shall find the construction of such roads to be necessary or advisable, he shall submit specific recommendations in respect to the kind of roads to be constructed, their location and extent, together with an estimate of cost for the same.

It is desired that the investigation contemplated by the act shall be made by you and that you examine very carefully into the necessity or advisability of constructing wagon roads across the reservation and submit such information as will enable the department to make an intelligent report to the Congress with specific recommendations. The question should be approached with a view to the highest development of the irrigated section of the reservation by furnishing an outlet and the means of transportation for the produce raised on these lands, on which the Government has already expended a large amount of money and will expend additional sums. In taking up the matter the following particular points should be covered:

1. There should be prepared a map of the area to be improved, on which should be shown distinctly the tribal lands, the allotted lands, and the lands owned by whites. In the preparation of this map, and in any surveying work which may be necessary, you may obtain the assistance of the superintendent of irrigation, and it is suggested that the map be drawn to a scale of about 1½ inches to 2 inches to the mile.

2. On this map there should also be shown the location of the principal roads now used and your report should describe distinctly the condition of such roads.

3. There should likewise be indicated on the map the precise location of the old roads which in your judgment it would be advisable to improve and the new roads which should be constructed so as to benefit the greatest number of Indians and at the same time develop the largest area of agricultural land. You should give the reasons for the necessity or advisability of the improvements suggested and describe as near as possible the benefits to be derived therefrom.

4. The cost per mile of road construction and the availability of material. Are there not on the reservation at slight depths beneath

the soil or on the surface at some places large beds of gravel which would make good roads? It is suggested that you consult with Superintendent of Irrigation Martin regarding this phase of the matter and obtain his views. If such gravel beds are available at convenient places, it is believed that practically no expense whatever would be incurred for material.

The improvement of the roads would be warranted by reason of the enhancement of value of the adjoining Indian lands, thereby indirectly reimbursing the Indians for the expenditure. Not only so, but the Indians themselves would derive employment in the work of improvement, and if the material is conveniently available almost the entire amount authorized could be expended in Indian labor.

White people who own lands on the reservation, who would be benefited by the road improvements, should also be required to aid in the work, either by contributing funds or labor. This could be accomplished by having such persons who own lands adjoining the road which it is desired to improve, agree, in writing, before the work is undertaken, to pay in money their proportionate share, based on the length of road adjoining their lands at the estimated cost per mile of construction, or, if they had not the money to put into the enterprise, they could be required to agree in writing to contribute labor, it being determined beforehand that one day's labor shall represent and be accepted in lieu of a certain amount of cash. It is believed that you will have no difficulty in obtaining such agreements and the white people would be perfectly willing to contribute to the improvement of the roads adjoining their lands rather than have the improvements confined exclusively to roads adjoining lands owned entirely by Indians.

In working up a comprehensive system of road improvement so as to develop the irrigated lands, would it not be a good idea to consider the construction of two main highways, one running from Yakima to Wapato, thence westerly and southerly following section lines wherever practicable, to the agency; and the other road running in a westerly direction from Toppenish. These would form outlets from the agency through the irrigated section to the railroad. Then there could be constructed in a northerly and southerly direction, so as to touch or cross these two main highways, as many roads as might be deemed advisable or for which funds were available.

In reporting on the matter it is not the intention that you should confine yourself to the points suggested above, but that you should furnish all information possible which will enable the department and the office to come to a thorough understanding of the conditions, the necessity for improvement, the best manner in which the improvements may be made, and the probable cost thereof.

Very respectfully,

R. G. Valentine, *Commissioner.*

Approved:
Frank Pierce,
First Assistant Secretary.

March 27, 1911.

DEPARTMENT OF THE INTERIOR,
UNITED STATES INDIAN SERVICE,
Yakima Agency, Fort Simcoe, Wash., July 7, 1911.

HON. COMMISSIONER OF INDIAN AFFAIRS,
Washington, D. C.

SIR: I wish to refer to office letter dated March 25, 1911, referring to section 23 of the Indian appropriation act for the fiscal year 1912, approved March 13, 1911 (Public, No. 454), relative to roads on the Yakima Reservation, and calling upon me for a report in the premises.

Public sentiment with regard to this matter has undergone a material change since the petition calling for the $100,000 appropriation was forwarded by the Wapato Commercial Club. It was the feeling of the commercial club that this appropriation would be made by Congress as a gratuity and that the same would not be charged against the Indians. For the reason that the appropriation contemplated by the department is reimbursable, to be repaid from tribal funds, and for the further reason that the expenditure of $100,000 from tribal funds would greatly reduce the amount of money which would be finally available for irrigation and drainage, the citizens who originally petitioned for the appropriation now have passed a resolution asking that the petition be disregarded. A copy of the resolution is herewith inclosed.

The letter which I am now writing I wish to be considered in the nature of a preliminary report, to be supplemented by further information, and especially by a more complete map, in case the department deems this advisable. I feel, however, that under the circumstances the information I am submitting will be deemed sufficient to warrant an adverse recommendation as to the legislation contemplated.

In my judgment it would not be practicable at this time to expend so large a portion of Indian funds for the purpose specified; neither would it be fair to the Indian. It seems to me that it would be in the nature of forcing taxation upon him, which was not contemplated by the allotment act. Furthermore, large numbers of the Indians have lands at places remote from the district where the improvement is contemplated and would derive little or no benefit from the roads if constructed. They have at all times been bitterly opposed to legislation of this kind and feel that before so large an amount of their funds should be appropriated it would be only just and right that they should be consulted and should give their consent to such an appropriation. I personally feel that the Indians are right in this stand. It is noted also that it was contemplated to improve the irrigated section only. About 20 per cent of the land in the irrigated section is owned by whites, who would be benefited as much as the Indians; moreover, this would not take into consideration Indians living in Simcoe Valley and near the fort; in other words, those living in the western portion of the valley, where the most important Indian settlement exists.

I feel also that there has been an exaggerated idea as to the condition of the roads on this reservation. Aside from the roads inclosed within the red-pencil mark on the map herewith submitted, which incloses the volcanic ash district, which can in general be avoided, I do not consider the roads worse than they are in other portions of the county; in fact, all roads lying outside of this volcanic ash district are fairly good when they are not flooded by the careless use of irrigation water. In other words, the people in many instances are to blame rather than the roads. Several prosecutions have been made by way of correcting this evil and much improvement has resulted in this line.

The map I have submitted, it will be seen, is one used in connection with a petition for the opening of roads on the reservation and placing the same under county control. The entire area it has been proposed to improve is not shown on the map, but nearly all is shown. It will be observed that I have indicated on the eastern portion of the map how far the roads continue. Since I feel that an adverse recommendation will surely be made relative to this proposed legislation, I felt it unwise at this time to call upon Mr. Martin for a more complete map, since much labor and expense would be involved, but will, of course, call upon him for such a map if further report is required.

The principal roads on the reservation are indicated on this map by heavy lines, inclosing the sections. Not all roads represented by these lines, however, have been opened, though practically all are opened in the eastern portion of the reservation, where the road improvement is contemplated. There is already a fairly good road extending from the gap south of North Yakima along the railroad to a point about 3 miles southeast of Toppenish. This road is passable for automobiles or heavy loads at all times. Likewise there is a good road extending from the Toppenish Road along lateral C to the main irrigation canal near the gap. There is also a good road extending along lateral A from the Toppenish Road to a point 7 miles north. The road running along lateral B could be repaired at little expense. Likewise the road running south from Wapato to the Toppenish Road is in good condition, except from a point 4 miles south of Wapato to the Toppenish Road. The roads outside of the volcanic-ash district could be graveled without very much expense. Perhaps $200 per mile would do all the graveling required. This could be done with a road machine in most instances, as the gravel in this portion of the reservation is not very deep. Such graveling, however, I deem to be entirely unnecessary, as a well-graded road, using the ordinary soil, is very good and serviceable if not made bad by careless irrigation. A road extending over the volcanic-ash district east and west 2 miles south of Wapato would be a considerable advantage. Likewise a continuation of the road leading west from Wapato would be useful if extended 5 miles into the volcanic-ash belt. This work, however, would be very expensive. The gravel would have to be hauled a very long distance, and the expense of grading and graveling might be conservatively placed at $6,000 per mile.

The office will remember that I was given a special authority of $5,000 for road work on the reservation. This money was practically all expended before July 1, likewise a few hundred dollars granted in a previous authority. By referring to the map the red lines indicate the roads I have improved, excepting along the railroad. These roads were in fairly good condition in most places. I have graded the bad places where it was impossible to get through with heavy loads and automobiles and have bridged all creeks and ditches. It is possible now to drive an automobile or heavy wagon with reasonable facility over all the roads thus indicated. It will be noted that there is now a reasonably direct road from Toppenish to Fort Simcoe. There is also a good road extending from Wapato to Fort Simcoe. The blue pencil marks on the volcanic-ash district connecting the roads indicated by red ink will show the route. Of course the road over the volcanic-ash district is not very good, but as low places have been followed across this district they are not as bad as they would be in other places and are passable at this time by automobiles and heavy wagons. Some portions of the roads indicated by the red ink lines have been very rough, but this in most instances is because they were new. The unevenness where the roads have been graded will largely disappear after the roads have been used for some time and have fully settled.

Since practically all of these roads are now under county control and the county will probably expend from $5,000 to $10,000 per year in keeping them up, I feel that no immediate uneasiness is justifiable as to future road conditions. It seems to me it would be just and reasonable if from $2,000 to $3,000 were appropriated each year from tribal funds to aid the county authorities, but the expenditure of $100,000 would appear to be out of reason. As will be seen by the map, much was accomplished this year in the way of practical results with the $5,000 thus allowed.

Bearing in mind that perhaps 20 per cent of the land in the irrigated portion of the reservation is now in the hands of white settlers, it will be understood that the roads on this portion of the reservation touch many farms owned by white people. I feel sure the office is mistaken in thinking that these white farmers would cheerfully assist in building these roads either by cash payments or by labor. The taxes on the reservation are very high indeed, in some cases reaching as high as $6 per acre on cultivated lands. Since these parties are paying taxes, I feel that they would not wish to bear the additional tax which such assistance would mean. Moreover, many farmers would live a mile or two from the proposed roads. These farmers would be benefited almost as much as those living immediately adjoining the roads. I feel sure that none of the farmers at such a distance from the road would be willing to contribute any assistance.

The office also feels that much of the work could be done by Indian labor. This is also a mistake. While in conversation with Mr. Martin recently concerning this proposition I learned from him that he had had either one application or no application for employment from Indians in all of his drainage work. Likewise in the road construction work which I have carried on this spring I have found it impossible to do even the larger portion of the work by Indian help. These Indians have too much money and are not willing enough to work to grasp such an opportunity. We did find it possible in many instances to get Indian teams with white drivers, but not many Indians were willing to work themselves. In my judgment if $100,000 were appropriated for roads on the reservation it would not be possible to do more than 20 per cent of the work by Indian labor, and even a large proportion of this small percentage would be covered by Indian teams driven by white laborers.

Mr. J. W. Martin, superintendent of irigation, joins with me in the opinion that extensive graveling of roads on the reservation is not practicable at this time on account of the excessive cost. He recommends strongly that at least such graveling be deferred until such time as the Wapato project has been constructed, believing that the construction of canals will in most cases make gravel easily available, thus reducing the cost to a mere fraction of what it would be at this time. I believe Mr. Martin's recommendation is well founded. For example, in the eastern portion of the reservation south of Toppenish, were graveling necessary, there would be an abundance of gravel at this time which has been excavated in making the drainage ditches.

I am strongly opposed to the appropriation for the reasons herein outlined.

In case a further report is necessary I request that the map I am submitting be returned.

Very respectfully,

SAM YOUNG,
Superintendent and Special Disbursing Agent.

At a meeting of a committee appointed to formulate plans for the organization of a reservation water users' association for the Yakima Indian Reservation, which committee was appointed at a mass meeting of water users held in the town of Wapato on the 20th day of April, 1911, the said committee convening in the town of Wapato on the 6th day of June, 1911, the following resolution was adopted pursuant to instructions of those assembled at the mass meeting, the decision being unanimous:

Resolved, That it is the sense of the water users of the Yakima Indian Reservation that the petition forwarded to the Department of the Interior at Washington, and to Representatives in Congress, asking an appropriation of $100,000 for the repair of roads on the reservation be recalled, and that no further action be taken in the matter, either by the Department of the Interior or by Congress. This action is taken with a view to hastening the commencement of operations on the Wapato irrigation project and also for the reason that the initial intent of the petition was not to tax the proposed improvements on the roads to the tribal funds of the Yakima Indians.

F. A. WILLIAMS,
Committee Chairman.
E. A. LANE,
Committee Secretary.

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62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 384.

OPERATIONS OF THE POSTAL SAVINGS SYSTEM.

LETTER FROM THE CHAIRMAN BOARD OF TRUSTEES, POSTAL SAVINGS SYSTEM, SUBMITTING STATISTICS REGARDING THE OPERATIONS OF THE SYSTEM DURING THE FISCAL YEAR ENDED JUNE 30, 1911.

January 3, 1912.—Referred to the Committee on the Post Office and Post Roads and ordered to be printed.

Post Office Department,
Office of the Postmaster General,
Washington, D. C., December 26, 1911.

The Speaker of the House of Representatives.

Sir: On behalf of the board of trustees of the Postal Savings System, I have the honor to submit herewith, as required by section 1 of the act approved June 25, 1910, certain statistics regarding the operations of the system during the fiscal year ended June 30, 1911.

At the close of the fiscal year no interest had been paid to depositors, no funds had been invested in Government securities, and no deposits were regarded as unclaimed.

From the initial establishment, on January 3, 1911, of one depository office in each State and Territory to the close of the fiscal year, six months later, the system was largely experimental, but since then it has been rapidly extended. The number of depository offices, which, on the 30th of June, last, amounted to only 400, has been increased to more than 7,500. The deposits, which on that date amounted to $677,145, now exceed $11,000,000.

Respectfully,

Frank H. Hitchcock,
Chairman Board of Trustees, Postal Savings System.

TABLE 1.—*Offices opened to receive postal savings deposits during the fiscal year ended June 30, 1911, with the date of opening and the number of depositors.*

Office.	Date.	Number of depositors.	Office.	Date.	Number of depositors.
Alabama (7 offices):	1911.		Georgia (7 offices):		
Anniston	May 1	33	Americus	...do...	2
Bessemer	Jan. 3	191	Brunswick	Jan. 3	81
Ensley	June 1	37	Cedartown	June 19	5
Florence	June 27	4	Gainesville	June 12	75
Gadsden	June 19	11	Hawkinsville	June 27	8
Opelika	June 27	15	Rome	May 1	3
Tuscaloosa	June 12	4	Thomasville	June 27	4
Arizona (6 offices):			Idaho (7 offices):		
Bisbee	May 1	272	Coeur d'Alene	Jan. 3	144
Clifton	June 12	17	Gooding	June 26	1
Douglas	June 1	48	Moscow	June 27	7
Globe	Jan. 3	272	Nampa	...do...	5
Prescott	June 12	16	Pocatello	June 12	8
Yuma	June 19	16	Twin Falls	June 1	19
Arkansas (7 offices):			Wallace	June 19	36
Arkadelphia	June 26	9	Illinois (13 offices):		
Conway	June 12	34	Belleville	June 1	11
Helena	May 1	26	Blue Island	June 27	7
Mena	June 19	6	Canton	June 12	29
Searcy	June 27	2	Collinsville	June 27	19
Stuttgart	Jan. 3	51	De Kalb	June 19	12
Warren	June 27	7	Harvey	June 27	11
California (17 offices):			Kewanee	June 26	2
Corona	...do...	4	La Salle	May 1	39
Eureka	June 1	49	Ottawa	June 27	6
Grass Valley	June 27	7	Pekin	Jan. 3	229
Hollister	...do...	5	St. Charles	June 26	20
Martinez	June 19	20	Savanna	June 27	2
Monterey	June 12	3	Staunton	...do...	25
Needles	...do...	17	Indiana (8 offices):		
Nevada City	June 19	6	Alexandria	...do...	11
Oroville	Jan. 3	163	Bedford	...do...	7
Palo Alto	June 26	2	Gary	May 1	110
Petaluma	June 12	24	Indiana Harbor	June 1	9
Redding	June 26	36	Linton	June 27	9
San Luis Obispo	June 27	10	Michigan City	June 19	14
Santa Cruz	May 1	104	Princeton	Jan. 3	109
Santa Rosa	June 26	17	Sullivan	June 12	5
Sonora	June 27	1	Iowa (10 offices):		
Tulare	...do...	6	Albia	June 1	29
Colorado (18 offices):			Centerville	May 1	98
Canon City	May 1	55	Colfax	June 19	11
Colorado City	June 27	25	Decorah	Jan. 3	29
Cripple Creek	June 19	39	Harlan	June 26	1
Durango	June 12	20	Oelwein	June 27	19
Fort Collins	June 27	4	Oskaloosa	...do...	2
Golden	...do...	5	Red Oak	June 12	1
Grand Junction	June 12	35	Sheldon	June 27	....
Greeley	June 27	11	Spencer	...do...	4
La Junta	June 26	2	Kansas (11 offices):		
Las Animas	June 27	....	Chanute	...do...	23
Leadville	Jan. 3	631	Coffeyville	...do...	14
Longmont	June 27	8	Emporia	...do...	19
Loveland	...do...	1	Fort Leavenworth	...do...	10
Monte Vista	June 26	14	Independence	June 1	21
Salida	...do...	10	Junction City	June 26	6
Silverton	June 19	12	Lindsborg	June 19	8
Trinidad	June 1	28	Manhattan	May 1	53
Telluride	June 19	16	Osage City	June 27	7
Connecticut (6 offices):			Parsons	June 12	39
Ansonia	Jan. 3	60	Pittsburg	Jan. 3	258
Bristol	May 1	19	Kentucky (8 offices):		
Glastonbury	June 19	13	Bowling Green	June 27	7
South Manchester	June 27	10	Catlettsburg	June 19	5
Willimantic	June 12	19	Frankfort	June 12	4
Winstead	June 27	9	Georgetown	June 27	....
Delaware (1 office):			Henderson	June 26	6
Dover	Jan. 3	37	Hopkinsville	June 1	9
Florida (8 offices):			Madisonville	May 1	33
Apalachicola	June 19	10	Middlesboro	Jan. 3	104
Daytona	June 27	1	Louisiana (7 offices):		
Fernandina	...do...	16	Alexandria	May 1	30
Key West	Jan. 3	93	Bogalusa	June 27	7
Miami	June 1	90	Hammond	June 19	1
Orlando	June 12	18	Jennings	June 12	12
St. Augustine	May 1	76	Lake Charles	June 26	12
West Palm Beach	June 26	21	New Iberia	Jan. 3	85
			Opelousas	June 27	7

TABLE 1.—*Offices opened to receive postal savings deposits during the fiscal year ended June 30, 1911, with the date of opening and the number of depositors*—Continued.

Office.	Date.	Number of depositors.	Office.	Date.	Number of depositors.
Maine (6 offices):			Nebraska (9 offices):		
Auburn	..do....	3	Alliance	May 1	38
Biddeford	June 12	15	Aurora	June 27	3
Rumford	Jan. 3	55	Columbus	June 12	7
Saco	June 27	6	Crete	June 27	6
Waterville	May 1	31	Holdrege	June 19	16
Westbrook	June 19	20	McCook	June 27	6
Maryland (5 offices):			Nebraska City	Jan. 3	144
Annapolis	June 12	17	North Platte	June 1	33
Bel Air	June 26	1	Plattsmouth	June 26	5
Frostburg	Jan. 3	29	Nevada (5 offices):		
Havre de Grace	May 1	10	Carson City	Jan. 3	217
Salisbury	June 27	2	Elko	June 12	7
Massachusetts (9 offices):			Ely	..do....	44
Gardner	June 1	40	Goldfield	June 1	362
Hyde Park	June 12	42	Tonopah	May 1	234
Lee	June 27	3	New Hampshire (5 offices):		
Leominster	..do....	13	Berlin	Jan. 3	81
Milford	..do....	6	Claremont	June 19	8
Norwood	Jan. 3	405	Dover	May 1	39
Peabody	June 19	10	Laconia	June 12	64
Rockport	May 1	69	Milford	June 27	19
Webster	June 27	3	New Jersey (6 offices):		
Michigan (10 offices):			Boonton	..do....	35
Calumet	June 19	3	Burlington	May 1	29
Gladstone	June 27	8	Dover	June 12	8
Houghton	Jan. 3	37	Long Branch	June 26	15
Iron Mountain	June 27	8	Rutherford	Jan. 3	131
Ironwood	May 1	104	West Hoboken	June 19	35
Marquette	June 12	8	New Mexico (8 offices):		
Negaunee	June 26	3	Carlsbad	June 26	8
Owosso	June 1	26	Clovis	June 19	29
Sault Ste. Marie	June 27	4	East Las Vegas	June 12	15
Wyandotte	June 26	7	Raton	Jan. 3	50
Minnesota (10 offices):			Roswell	June 12	10
Bemidji	Jan. 3	86	Santa Fe	June 27	1
Cloquet	June 26	4	Silver City	May 1	8
Crookston	June 27	2	Tucumcari	June 1	5
Eveleth	June 12	45	New York (11 offices):		
Hibbing	June 1	38	Cohoes	Jan. 3	120
Montevideo	June 27	3	Dunkirk	June 19	68
New Ulm	..do....	7	Hempstead	June 27	3
Red Wing	June 26	9	Herkimer	June 12	30
St. Cloud	May 1	10	Mamaroneck	June 26	10
Virginia	June 19	23	New Brighton	June 27	8
Mississippi (8 offices):			North Tonawanda	May 1	27
Biloxi	..do....	8	Rosebank	June 27	14
Brookhaven	June 27	4	Salamanca	June 26	15
Clarksdale	June 26	6	Watervliet	June 1	53
Corinth	June 27	12	Watkins	..do....	42
Greenville	May 1	94	North Carolina (6 offices):		
Grenada	June 12	10	Concord	..do....	14
Gulfport	Jan. 3	90	Elizabeth City	May 1	29
Natchez	June 1	26	Goldsboro	June 26	5
Missouri (11 offices):			High Point	June 27	1
Cape Girardeau	June 12	10	Rocky Mount	..do....	2
Carrollton	June 26	5	Salisbury	Jan. 3	51
Carthage	Jan. 3	344	North Dakota (8 offices):		
De Soto	June 19	16	Carrington	June 27	....
Hannibal	May 1	19	Devils Lake	May 1	22
Lexington	June 27	14	Dickinson	June 1	12
Mexico	..do....	4	Grafton	June 26	....
Moberly	..do....	25	Mandan	June 27	4
Monett	..do....	6	Valley City	..do....	....
St. Charles	June 1	17	Wahpeton	Jan. 3	27
Trenton	June 27	17	Williston	June 19	2
Montana (10 offices):			Ohio (9 offices):		
Anaconda	Jan. 3	416	Ashtabula	Jan. 3	312
Bozeman	June 27	2	Barberton	June 1	61
Dillon	June 12	8	Bellaire	May 1	14
Hamilton	June 26	7	Canal Dover	June 19	15
Havre	..do....	4	Conneaut	June 12	97
Kalispell	May 1	12	Crestline	June 27	14
Lewistown	June 27	6	Geneva	..do....	3
Livingston	..do....	11	Leetonia	June 26	5
Miles City	June 1	12	Niles	June 27	24
Red Lodge	June 19	6			

TABLE 1.—*Offices opened to receive postal savings deposits during the fiscal year ended June 30, 1911, with the date of opening and the number of depositors*—Continued.

Office.	Date.	Number of depositors.	Office.	Date.	Number of depositors.
Oklahoma (9 offices):			**Texas (8 offices):**		
Ardmore	June 12	3	Brenham	June 19	10
Bartlesville	June 1	25	Del Rio	...do.....	10
El Reno	June 27	10	Georgetown	June 26	6
Guymon	Jan. 3	43	Nacogdoches	June 27	3
Lawton	June 19	29	Port Arthur	Jan. 3	88
Okmulgee	June 26	7	San Angelo	June 27	12
Sapulpa	June 27	3	Temple	May 1	30
Shawnee	May 1	50	Victoria	June 12	14
Wagoner	June 27	2	**Utah (3 offices):**		
Oregon (13 offices):			Bingham Canyon	May 1	28
Astoria	May 1	179	Logan	June 1	17
Baker City	June 26	8	Provo	Jan. 3	148
Eugene	June 19	41	**Vermont (5 offices):**		
Grants Pass	June 27	15	Barre	May 1	20
Klamath Falls	Jan. 3	54	Montpelier	Jan. 3	30
La Grande	June 1	16	Newport	June 27	....
Hood River	June 27	1	Proctor	June 12	6
McMinnville	...do.....	11	St. Johnsbury	June 19	10
Marshfield	...do.....	12	**Virginia (7 offices):**		
Medford	June 12	39	Alexandria	May 1	45
Oregon City	June 26	12	Clifton Forge	Jan. 3	44
Pendleton	June 12	4	Fredericksburg	June 27	2
The Dalles	June 19	37	Pulaski	June 26	11
Pennsylvania (15 offices):			Staunton	June 1	5
Berwick	May 1	21	Suffolk	June 12	4
Brownsville	June 27	3	Warrenton	June 27	2
Connellsville	...do.....	3	**Washington (13 offices):**		
Dubois	Jan. 3	322	Aberdeen	June 19	51
Homestead	June 12	10	Anacortes	June 27	2
Irwin	June 19	20	Bremerton	...do.....	50
Johnsonburg	June 27	15	Chehalis	June 26	5
Leechburg	June 26	5	Ellensburg	June 19	19
Minersville	June 19	16	Hoquiam	May 1	57
Monessen	June 26	8	Montesano	June 27	5
New Kensington	June 27	24	Mount Vernon	...do.....	3
Ridgway	...do.....	4	Olympia	Jan. 3	156
Shenandoah	...do.....	15	Port Townsend	June 27	5
Steelton	June 1	27	South Bend	June 26	5
Vandergrift	June 27	5	Vancouver	June 1	157
Rhode Island (3 offices):			Wenatchee	June 12	9
Bristol	Jan. 3	156	**West Virginia (5 offices):**		
East Greenwich	June 19	39	Grafton	Jan. 3	44
Westerly	May 1	41	Keyser	June 27	10
South Carolina (8 offices):			Mannington	June 26	4
Anderson	May 1	14	Martinsburg	June 27	9
Darlington	June 19	....	Wellsburg	May 1	20
Georgetown	June 12	3	**Wisconsin (12 offices):**		
Laurens	June 27	1	Antigo	June 26	2
Newberry	Jan. 3	27	Ashland	May 1	43
Orangeburg	June 26	1	Beaver Dam	June 1	10
Rockhill	June 27	2	Chippewa Falls	June 19	49
Sumter	June 1	5	Cudahy	...do....	14
South Dakota (7 offices):			Hartford	June 27	4
Brookings	...do....	2	Manitowoc	Jan. 3	264
Canton	June 27	2	Merrill	June 26	9
Dallas	...do.....	7	Rhinelander	June 12	11
Deadwood	Jan. 3	48	Stoughton	June 26	5
Lead	June 19	14	Tomahawk	June 27	10
Lemmon	June 26	4	Wauwatosa	...do....	1
Yankton	June 27	....	**Wyoming (6 offices):**		
Tennessee (9 offices):			Evanston	June 12	15
Brownsville	...do....	3	Douglas	June 26	3
Clarksville	May 1	37	Laramie	Jan. 3	143
Covington	June 27	10	Rawlins	June 19	9
Dyersburg	June 19	4	Rock Springs	May 1	13
Humboldt	...do.....	9	Sheridan	June 1	12
Jellico	June 1	9			
Johnson City	Jan. 3	260			
Murfreesboro	June 26	....			
Tullahoma	June 27	1			

TABLE 2.—*Summary of transactions at postal savings depositories, by States and Territories, for the fiscal year ending June 30, 1911.*

State or Territory.	Number of depositors.	Deposits.	Withdrawals.	Balance to the credit of depositors.	Savings cards and stamps.		Amount at interest in banks June 30, 1911.	Interest due from banks July 1, 1911.	Amount of deposits surrendered for bonds July 1, 1911.
					Sold.	Redeemed.			
Alabama	295	$14,780	$3,543	$11,237	$74.50	$57	$10,749.60	$67.55	$20
Arizona	641	64,141	8,835	55,306	51.00	32	47,566.30	238.66	5,900
Arkansas	135	3,747	981	2,766	34.20	26	2,090.00	8.27	....
California	474	29,334	4,007	25,327	186.50	51	21,756.90	96.85	460
Colorado	916	92,488	6,044	86,444	80.60	53	72,404.60	491.70	9,760
Connecticut	130	3,108	507	2,601	71.00	46	1,999.70	7.24	....
Delaware	37	666	92	574	57.00	18	612.20	4.34	....
Florida	316	18,147	2,811	15,336	98.50	72	14,381.90	59.06	20
Georgia	178	7,654	874	6,780	55.90	34	2,961.90	22.82	20
Idaho	220	16,202	2,385	13,817	37.70	26	8,539.00	54.89	....
Illinois	412	22,037	2,399	19,638	195.70	62	16,972.90	93.08	100
Indiana	274	12,169	1,702	10,467	54.40	35	9,206.50	45.52	720
Iowa	194	8,536	513	8,020	71.30	33	6,763.60	25.75	1,060
Kansas	451	26,431	4,756	21,675	229.80	179	19,101.50	120.67	540
Kentucky	173	4.928	477	4,451	244.00	147	3,744.50	17.09	500
Louisiana	144	3,989	686	3,303	108.90	91	2,461.60	15.56	200
Maine	130	4,466	598	3,868	188.10	146	2,398.20	12.44	400
Maryland	59	1,500	405	1,095	25.30	4	940.90	5.03	160
Massachusetts	591	16,927	2,790	14,137	385.80	247	11,628.90	78.55	1,320
Michigan	208	14,142	728	13,414	46.30	14	12,593.30	44.57	300
Minnesota	227	10,870	1,202	9,168	34.50	17	8,712.70	26.59	100
Mississippi	250	9,716	1,393	8,323	32.70	25	2,335.80	16.13	2,700
Missouri	477	31,523	4,374	27,149	115.70	53	24,477.40	167.79	2,020
Montana	484	46,708	5,669	41,039	81.00	53	36,215.00	271.15	3,620
Nebraska	258	9,510	1,044	8,466	71.70	48	7,877.50	42.21	160
Nevada	864	72,073	6,935	65,138	209.40	141	58,266.10	235.14	2,160
New Hampshire	211	6,217	681	5,536	97.00	45	4,975.80	29.16	500
New Jersey	253	5,914	617	5,297	247.20	135	5,336.10	25.70	20
New Mexico	126	4,133	820	3,313	43.40	20	2,485.60	17.66	....
New York	390	9,282	1,133	8,149	216.70	128	7,092.80	25.40	260
North Carolina	102	4,157	713	3,444	31.40	23	2,778.60	17.73	220
North Dakota	67	2,107	461	1,646	17.00	10	1,110.90	6.20	....
Ohio	545	27,411	3,424	23,987	124.00	73	20,192.90	113.34	2,660
Oklahoma	172	6,485	1,464	5,021	89.00	61	4,280.80	20.89	....
Oregon	429	29,028	2,527	26,501	45.70	14	17,925.30	52.43	200
Pennsylvania	498	22,228	3,326	18,902	207.00	149	17,785.20	111.32	520
Rhode Island	236	9,182	1,882	7,300	152.50	95	6,452.60	42.43	800
South Carolina	53	514	258	256	22.30	16	180.50	1.29	....
South Dakota	77	3,426	902	2,524	17.60	13	2,219.40	15.40	100
Tennessee	333	21,313	7,502	13,811	74.40	59	12,908.90	103.44	720
Texas	173	5,352	1,608	3,744	57.00	45	2,773.40	15.13	....
Utah	193	8,516	1,730	6,786	69.20	48	5,485.50	38.34	220
Vermont	66	2,640	483	2,157	32.20	16	1,755.30	10.81	400
Virginia	113	2,389	295	2,094	57.60	21	1,974.50	7.79	....
Washington	524	34,182	1,964	32,218	76.50	36	25,901.70	115.32	500
West Virginia	87	2,463	375	2,088	39.80	24	1,400.90	10.43	500
Wisconsin	421	15,215	1,118	14,097	119.50	80	12,446.30	71.21	660
Wyoming	198	10,683	1,951	8,732	146.50	117	7,449.40	47.77	1,380
Total	13,805	778,129	100,984	677,145	4,825.70	2,938	571,670.90	3,167.73	41,900

TABLE 3.—*Statement of the "amount of extra expense of the Post Office Department and the postal service incident to the operation of the postal savings-depository system" during the fiscal year ended June 30, 1911.*

Salaries (employees detailed at the central office)	$11,778.58
Expense to Division of Supplies	500.00
Expense to Division of Stamps	279.04
Janitor service	384.08
Heat and light	269.97
Clerks at depository offices	1,140.00
Total	14,351.67

TABLE 4.—*Statement of the "amount of work done for the savings-depository system by the Post Office Department and the postal service in the transportation of free mail" during the fiscal year ended June 30, 1911.*

Classes of mail.	Amount of postage.	Actual cost per dollar of postage.[1]	Total cost.
First class	$5,863.85	$0.67528	$3,959.74
Third class	117.00	1.08471	126.91
Fourth class	3,727.28	.49466	1,843.68
Total			5,930.33

[1] Furnished by the Post Office Department.

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 389.

INDIANS OF SKULL VALLEY AND DEEP CREEK, UTAH.

LETTER

FROM

THE SECRETARY OF THE INTERIOR,

TRANSMITTING

REPORT OF THE SPECIAL AGENT APPOINTED JULY 3, 1911, TO VISIT THE INDIANS OF SKULL VALLEY AND DEEP CREEK AND OTHER DETACHED INDIANS OF UTAH.

January 4, 1912.—Referred to Committee on Indian Affairs and ordered to be printed.

Department of the Interior,
Washington, January 3, 1912.

Sir: The act of Congress approved March 3, 1911 (36 Stat. L., 1058, 1073), provides in part as follows:

> For the relief of distress among the Indians of Skull Valley and Deep Creek and other detached Indians in Utah, and for purposes of their civilization, ten thousand dollars, or so much thereof as may be necessary, to be immediately available, and the Secretary of the Interior shall report to Congress at its next session the condition of the Indians herein appropriated for and the manner in which this appropriation shall have been expended.

To carry out the purposes of the law quoted, a special agent was appointed July 3, 1911, to visit the Indians of Skull Valley and Deep Creek and the other detached Indians of Utah in order to determine their condition, ascertain their needs, and afford such relief as might be found necessary.

The report of the special agent indicates that these Indians have opportunities along many different lines to subsist and support themselves, but on account of the lack of necessary equipment and farming implements are not in position to take advantage of their opportunities. Schoolhouses, books, farming implements, and wire staples and posts for erecting fences to protect their lands from trespass of stock appear to be the principal needs of the Indians in question. The labor of these Indians is in demand in many quarters and brings a fair price.

No expenditures were made from the appropriation mentioned during the fiscal year ended June 30, 1911. However, there was expended during the present fiscal year, up to October 1 1911, $400 for salaries, $428.10 for traveling expenses, and $295.99 for fences, wire and staples, making a total expenditure of $1,124.09 for the benefit of these Indians.

There is inclosed a copy of the report, dated October 16, 1911, by the special agent appointed to look after the needs of the Indians in question.

Respectfully,
WALTER L. FISHER,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SALT LAKE CITY, *October 16, 1911.*

The COMMISSIONER OF INDIAN AFFAIRS,
Washington, D. C.

SIR: I beg leave to submit the following report on the scattered bands of Indians in Utah, which covers all my work not previously reported up to and including to-day:

INDIANS AT ST. GEORGE AND ENTERPRISE.

(See letters Hon. A. W. Ivins and Senator Smoot, July 8 to 20, 1911.)

These Indians all belong to the Shivwits Reservation, and as the department has expended at one time $5,000 and at another $15,000, under the administration of Hon. A. W. Ivins as special agent, to locate them on this reservation, outfit them with teams, implements, wagons, harness, etc., and the usual amount for administration purposes since that time, and only lately built a modern school plant for their use, it would seem unwise to consider purchasing land at Enterprise or anywhere else for any Indians enrolled here. Although some of their little fields are badly washed, caused by the unprecedented flood of two years ago, yet there are numerous little patches adjoining their holdings which can, by a reasonable industry, be put under cultivation.

All of the irrigable land on this reservation is marvelously productive and will raise a crop of wheat each year, followed by a crop of corn, which may be interplanted with beans, squash, pumpkins, etc., all making good crops the same season if properly attended to. Alfalfa gives four cuttings and very heavy crops. All kinds of deciduous fruits, and even the fig and pomegranate, attain their greatest perfection here. When these farms were bought, a great deal of fruit was growing upon them, which has with few exceptions gone to destruction.

Should there not be sufficient land to demand all their time in its cultivation, there is a great deal of wood on the reservation, which finds a good market in St. George. The labor of both men and women finds a good opening at fair wages in St. George.

As educational opportunities are lacking elsewhere and Indians generally are not desired in the public schools and are very indifferent in this respect, any supposed advantage for the adults in purchasing lands at Enterprise or elsewhere would be more than offset by loss of school and other advantages for the young.

There are also possibilities in dry farming and cattle raising on the reservation.

The Government owns a very valuable water right here, which should be carefully protected, as forces are now at work to secure all the unused water in the Santa Clara River, which passes through the entire reservation. The Government owns seventy-fourteen-hundred and thirtieths of the flow of the stream from and including the town of Gunlock, Utah, or as expressed in another paragraph of the court decree, setting this water aside, water for 70 acres. If this land is worked intensively, and these opportunities for outside income embrace by the Indians, I see no reason why the 126 who are enrolled should not in this genial climate be assured of a comfortable living, with no further expense than that necessary for administration and educational purposes. The present superintendent is fully alive to the possibilities for development. I therefore recommend that no action be taken by the department to acquire any land for any of the Indians enrolled on this reservation.

INDIANS AT KANAB.

These Indians are enrolled at Kaibab. They support themselves mainly by working for the whites in Kanab and vicinity. They are industrious, send their children to the day school at Kaibab, and all have cattle cared for by the superintendent.

INDIANS AT LYMAN.

There are but two. But several years ago there was quite a number. They have died or disappeared to parts unknown. As one of the citizens remarked, "There used to be Indians all around through this country 25 years ago, but they have gone, God knows where."

GREENWICH AND KOOSHAREM.

I visited these Indians on September 25 and 26. They are located on three quarter sections of good land, about midway between the villages of Koosharem and Greenwich. One quarter section is patented to Walker Kisalvé, their headman, a very progressive and intelligent Ute Indian. The other half section was filed upon by other Indians who failed to make final proof, but has been occupied by Indians since and for many years previous. There are 4 Utes in this band and the remainder are Paiutes; total, 32.

There was at one time a very large band here, and all were under the care of a representative of the Mormon Church. The bishop of this ward still looks after their spiritual and temporal matters to some extent. They attend church and Sunday school, and up to two years ago the children attended public school at Koosharem, but owing to complaints of their utter lack of cleanliness caused the school authorities to debar them from this privilege. This is greatly to be regretted, as the children are intelligent and learn easily. Now they, in common with all other children belonging to these scattered bands, except one girl at Kanosh, are without school privileges.

All now seem free from disease, but in recent years an epidemic carried off a large number of young and old. They have two good roomy sawed-log houses, which they built by their own efforts, but at the time of my visit, were living in the wickiups.

Income.—Walker and Pete, two leading men have about 500 bushels of wheat and oats, and the camp has over 50 tons alfalfa hay, a large quantity of potatoes, pumpkins, and other garden truck. Pine nuts are very abundant, convenient, and great quantities are gathered and sold. At the close of the pine-nut harvest, all go to the beet fields near Richfield, where they are employed, both men and women, in topping beets. All the young men get employment with the whites in and around the towns in this valley. Aside from lack of school privileges they are considered a part of the community and are quite prosperous. They also have good horses, wagons, harness, mowers, rakes, plows, etc. Walker has eight head of cattle.

Water.—When water matters in this locality were adjusted by the court, probably no one appeared on behalf of the Indians, and they were not considered or named in the decree. Ex-Bishop Bagley, of Greenwich, who was the only white settler on Greenwich Creek, considered that the Indians were entitled to one-half the water. He put in a division box at his own expense, which division stands to this day. I have made request that he confirm this action by formally conveying this water to the Indians, so that it may become a matter of record.

Aside from securing this water right, I see no other problem connected with this band, except that of education, which is one that is, I fear, beyond solution under present conditions, although I shall endeavor to solve this, if possible.

RABBIT VALLEY AND GRASS VALLEY.

These Indians are reported to have moved away or died, none being here at present.

CEDAR CITY INDIANS.

I did not visit this band when within 60 miles, as I learned they were in the mountains after pine nuts.

Supt. Walter Runke (see his letter Dec. 10, 1907, file 97826, dept.) made a strong effort to induce these Indians to send their children to Panguitch, only 60 miles distant, without avail. Their headman, Capt. Pete, I understand does not want the Government to interfere with his band. They do not attend the Cedar City schools. I have no other information except that Bishop H. W. Lunt is their adviser. They are reported to be industrious and make good wages, as Cedar City is quite a large town. They appear to have 5 acres on which they live, and are about 30 in number. I shall visit them when convenient.

INDIANS AT INDIANOLA.

I quote from the history of San Pete County:

> This country was donated to the San Pete Indians by Brigham Young on behalf of the Mormon Church, and has been held by them as a perpetual home. In 1874 John Spencer was sent in by the Mormon Church as a missionary, who organized a ward, and presided as bishop, until his death, in 1891.

The early history of this band will doubtless be somewhat like that of all other scattered bands in Utah.

Formerly, about 200 Indians had homesteads, but they sold them to whites at the end of the 25-year period. Now only 6 Indians remain. Panewats, their head man, is over 100 years of age. Toque, his son, 60, and Charlie, Toque's son, 23. Each has a wife. Mr. A. C. Masden, a prominent business man of that section, thinks that upon the death of Panewats, the others will sell their land and go to the Ute Reservation, where they now have their live stock, consisting of 40 head of cattle and 50 head of horses. This will be the end of a Mormon Indian colony, which cost much time, labor, and money in the effort to civilize, Christianize, and otherwise improve the condition of these Indians. It is of interest also to note the final disposition of their lands.

KANOSH BAND.

I visited this camp on September 27–28. All were absent after pine nuts. They are located about 3 miles from Kanosh on a section of land, 50 acres of which is poorly fenced and about 20 acres is in alfalfa or wheat. They appear to have no regular water right decreed, and only get what is turned out for them by the town authorities. They raise enough alfalfa for their horses, some wheat, and garden, but their main dependence is working by the day for the whites of Kanosh and vicinity, aside from the large number of pine nuts which they gather and sell to procure their winter supplies. There is a good demand for their labor.

Their agricultural implements were practically worthless, and I have advertised for two plows, one mower, one hay rake, 3,000 pounds of barb wire, and one keg of staples to enlarge their pastures and repair their fences.

They depend upon Bishop Kimball, of Kanosh, for advice. The church has had an interest in them since the Black Hawk War, when their old chief, Kanosh, rendered them good service against the Utes.

This was also a large band, but it has melted away and only numbers 35 souls. With the exception of one little girl, who attends the Fillmore City School, these children have no school privileges. Leading citizens of Kanosh report marked improvement in these Indians as compared with their condition 10 years ago.

They are at least 100 miles from any other Indians. Were located on this land by the Mormon Church and are much attached to their location. The demand for their labor is constant and growing, and could some method be devised for educating the children their condition will gradually improve.

WASHAKIE BAND.

This is an apparently successful Mormon colony, under the oversight of Bishop George M. Ward, of Washakie. I have not yet visited this band, but have seen several members of it, two of whom called to see me on business connected with the Deep Creek Indians.

They report a good school, supported by county and State funds. They reside on lands secured by homestead entry, aggregating 3,120 acres, situated in township 14 north, range 3 west. Much of this is dry farmed. They also have 1,366 acres located in township 11 north, ranges 2 and 3 west, which last year was leased for $2,700. They raise grain and have their own thrashing machine. Those I saw were intelligent and well dressed, and reported all the others prosperous. I have not considered it necessary to visit this band as yet.

INDIANS IN SAN JUAN.

From what I have learned of these Indians, through office letter (68643–1911, F. H. D., Ed. L. & O.), inclosing communication of Supt. Clardy and from other reliable sources, I think it very necessary to visit San Juan County and make a careful study of conditions affecting these Indians, which I hope to do in November. There is much difference of opinion concerning them. One band is under the leadership of Mancos Jim, who caused much trouble about 1907. Forest Supervisor Snow was present at the hearing when they were rounded up by the authorities. He says that they were verbally promised certain lands in Montezuma Canyon and elsewhere in San Juan County.

INDIANS IN MOONLIGHT CANYON.

I learn that there is a band in Moonlight Canyon about 30 miles west of the one hundred and tenth meridian and the same distance south of San Juan River. I also learn that all the land south of the San Juan River west of one hundred and tenth meridian and north of the Utah-Arizona line, westward as far as the point where the Colorado River crosses, was reserved for the use of these Indians. I have been unable to find out anything of their condition whatever, but shall endeavor to visit them when I go to San Juan County.

FRISCO.

I learn there is a small band at Frisco in Beaver County. Have not visited them and can get but little information other than they are there.

INDIANS AT WARM CREEK.

The situation of the Indians at Warm Creek is peculiar. They number about 29. They are located in the northwest corner of Millard County, township 15 south, range 19 west. Charlie Peanim holds one quarter section by virtue of a homestead filing of his own and being the sole surviving heir of Peanim. Certain representatives of the Mormon Church assisted them in making these filings. In a collision over the water rights in which two white men were killed. the matter was thrown into the courts for settlement. The Mormon Church defended the rights of the Indians. A suit was brought in the name of Charlie Peanim and 5 other Indians. The court decreed five twenty-firsts of the entire flow of the stream to these Indians. None of the others owned land. Their descendants have been residing upon the lands of Charlie Peanim. The old friends of the Indians have sold out to a corporation, which is trying to purchase the land of Charlie Peanim, who has had his homestead right long enough to dispose of it. Should he do this, the descendants of these other Indians named in the court decree will be without a home. If they are entitled to four twenty-firsts of that water, or any of it, they will be without a place to use it unless other lands are secured. When I visited this place, I saw only Charlie Peanim's children, all the others being absent. I afterwards met the faction who are not related to Charlie Peanim, some 25 miles away. When I informed them who I was they told me Charlie Peanim was trying to run them off the land. The Indians at Deep Creek had invited them to make their home there, but they told me they loved their home at Warm Creek and did not want to go. This makes a very interesting problem for solution.

SKULL VALLEY.

This is a small band of about 50 Indians, of which I have made previous report. Their rights have been trampled upon by traveling stockmen, and their domestic water has been constantly rendered unfit for use by the great bands of sheep which range up and down this valley. They own the entire flow of Hickman Creek, which is a good water right if intelligently developed and used. They have made 11 homestead entries, 2 of which are patented. The land is good, and especially adapted to the growing of the best grade of alfalfa seed. Could they be under proper supervision, this should be produced in such quantities as to afford them a good support. They are badly in need of agricultural implements, and I have sent out advertisements for six walking plows, two harrows, one hayrake, and one mower complete, for their use. I have issued them 8,000 pounds barb wire and 100 pounds staples, and they have their entire holdings inclosed by a substantial fence of four wires. They still need (1) some method worked out to protect their domestic water from pollution by sheep; (2) a small day-school plant, with superintendent to act as teacher and farmer and his wife as housekeeper and matron. (See request Oct. 14, 1911.)

DEEP CREEK BAND.

While these Indians are more progressive than any of the other bands, and have made an effort to start a school of their own, yet conditions are such that they will be unable to accomplish but little in this line, and also need protection and much other assistance. There is a lawless element around the Utah-Nevada border which has caused them much trouble. They are settled upon 16 homesteads, which lie in a body in township 11 south, range 19 west, Juab County, and must soon make final proof.

Their water rights are still unsettled. They are using water from certain creeks, but need supervision in order to get much real benefit. I go there to-morrow to meet with them and the whites who are interested in the water of those creeks, from which they get their supply, for the purpose of arranging some definite agreement as to its use.

They need a good day-school plant also, with superintendent to act as teacher and farmer and wife as housekeeper and matron. (See request Oct. 14, 1911.) They have been much imposed upon by stockmen and are much in need of agricultural implements. I have sent out advertisements for 16,000 pounds barb wire, 200 pounds staples, 4 harrows, 2 mowers, 2 hay rakes, and 200 pounds black smooth wire No. 12 for their use.

FINANCIAL STATEMENT.

I submit the following in response to your letter October 7 (F. H. D., L. & O.), which shows amount and purpose of expenditures:

Voucher 1, first quarter, traveling expense	$68.10
Voucher 2, first quarter, traveling expense	80.40
Voucher 3, first quarter, traveling expense	99.60
Voucher 4, first quarter, personal service, salaries, and per diem	580.00
Voucher 5, first quarter, purchase wire, Skull Valley Indians	295.99
Total expenditures	1,124.09

I deemed it necessary to get over the entire field as far as practicable, in order to determine where the greatest need for expenditure existed.

CONSOLIDATION.

It has been suggested by prominent people who are interested in their welfare, that some method of gathering up and consolidating these smaller bands, and either locating them on the Uintah and Ouray Reservation or either purchasing land or endeavoring to arrange for a cooperative irrigation scheme to water a portion of the Kaibab Reservation and allot them there. For administration purposes at first glance this appears to be the only economical method. but this is open to very many objections. I find that they are ardently attached to the particular localities which they now inhabit, and are decidedly opposed to being moved away. In many cases they own the land upon which they live, by homestead entry, and have vested rights as communities in the water. In most places they are in a sense a part of the community in which they live. They have learned to labor and although what home life they have is far from what it should be, yet they are in reality self-supporting. No work is given them for charity's sake. Those who employ them expect and get an equivalent and their labor is quite necessary to the whites. Although at rare intervals through dry seasons and their characteristic lack of foresight, food supplies may not be as abundant as they might desire, yet no real suffering from hunger need be feared in these small groups near the Mormon villages, as they have always been considered to a certain extent as wards of the Church, and while the officials long since discontinued their old custom of almsgiving for the better one of assisting and encouraging them to self-help, yet any real suffering or calamity would receive immediate attention from the bishop in charge of the ward, to whom they invariably carry their real or imaginary troubles.

They have been looked after to a certain extent by the officials of the Mormon Church since Brigham Young was superintendent of Indian affairs in this Territory.

On entering the valley the Mormons made a treaty with the Indians, which was kept until Brigham Young endeavored to break up the traffic in women and children, who were captured from the weaker tribes by the Utes under the leadership of Walker, a bold and skillful leader of that day. These captives were sold or traded to Mexican trading parties. Walker regarded this as an interference with his rights and began what is known as the Black Hawk War. After a general peace was declared the policy advocated by Brigham Young was that it was better to feed them than to fight them, and a sort of system of issue of rations was adopted to relieve them when deemed necessary by the officials in charge of the different wards near where these Indians resided. This was replaced by assisting them to secure homesteads, teaching them agriculture, and endeavoring to make them self-supporting, which has been to a certain degree successful, although those who were in charge of this work have informed me that it was very difficult to make farmers of any of these Indians.

I have seen no case, so far, where the issue of rations would be necessary or advisable. I have made careful inquiry of whites who live near and are fully acquainted with their circumstances. In every case I have been advised that the greatest need was good agricultural implements and fencing to protect their lands from the depredations of stock. This will be a good permanent benefit to them. Where I have decided to issue such articles the Indians have told me that they had cared for their old people and expected to do so.

Unless the conditions in San Juan County are different from other places visited, the bulk of the constructive work will be Deep Creek and Skull Valley. The moral conditions among all these Indians appears to be good. They are apparently under good influences, and as practically all the State outside of Salt Lake City is "dry," they get but very little, if any, whisky.

Without exception, these bands are dwindling away more or less rapidly. The birth rate appears to be abnormally low, with rather a high death rate. As an instance of decrease, when the Shivwits Indians were located in 1893 they numbered 50 families, with 192 persons. They are now reduced to a total of 126. Forty years ago all these bands numbered into the hundreds. They will, without doubt, continually grow less until finally extinct.

Trusting that this fully complies with your letter of October 7, requesting full report by October 28, 1911, I am.

Very respectfully,

LORENZO D. CREEL,
Special Agent Scattered Bands Indians in Utah.

O

62d Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 406.

ENCOURAGEMENT OF RIFLE PRACTICE, ETC.

LETTER

FROM

THE SECRETARY OF WAR,

SUBMITTING

DRAFT OF A BILL TO ENCOURAGE RIFLE PRACTICE AND PROMOTE A PATRIOTIC SPIRIT AMONG THE CITIZENS AND YOUTH OF THE UNITED STATES, AND RECOMMENDING THAT IT BE ENACTED INTO LAW.

JANUARY 8, 1912.—Referred to the Committee on Military Affairs and ordered to be printed.

War Department,
Washington, January 5, 1912.

Sir: With the approval of the President, I have the honor to request a reintroduction in Congress of the accompanying draft of bill to encourage rifle practice and promote a patriotic spirit among the citizens and youth of the United States. This measure had the approval of a former President and of one of my predecessors, and has also been under consideration in Congress, as shown by Senate Report No. 414, Sixty-first Congress, second session, on Senate bill 5008. This report and the accompanying memorandum contain in detail the reasons for the enactment of this proposed legislation, and it is therefore unnecessary for me to do more than earnestly recommend the measure to the favorable consideration of Congress.

Very respectfully,

H. L. Stimson,
Secretary of War.

The Speaker of the House of Representatives.

A BILL To encourage rifle practice and promote a patriotic spirit among the citizens and youth of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of War is hereby authorized to issue, without expense to the United States, for use in target practice, United States magazine rifles and appendages therefor, not of the existing service model and not necessary for the maintenance of a proper reserve supply, to rifle clubs organized under the rules of the National Board for Promotion of Rifle Practice and to schools having a uniformed corps of cadets and carrying on military training, in sufficient number for the conduct of proper target practice. Issue of public property under this act shall be made in compliance with regulations prescribed by the Secretary of War insuring the designed use of the property issued, providing against loss to the United States through lack of proper care, and for the return of the property when required, and embodying such other requirements as he may consider necessary adequately to safeguard the interests of the United States.

Sec. 2. That for the promotion of rifle practice in public schools, colleges, universities, and civilian rifle clubs, including the cost of ammunition, prizes, and the necessary material and appliances therefor, and for the expense of indoor and outdoor competitions among the students and members attending or belonging to the same, including the necessary traveling expenses and per diem of the persons designated by the Secretary of War to superintend such instruction and competitions, which shall be conducted by the Secretary of War, under the supervision of the National Board for the Promotion of Rifle Practice, there is hereby annually appropriated, out of any money in the Treasury not otherwise appropriated, the sum of one hundred thousand dollars.

War Department,
December 18, 1911.

Sir: In reintroducing the bill entitled "A bill to promote a patriotic spirit among the citizens and youth of the United States and for the encouragement of rifle practice," attention is called to the fact that this and similar proposed legislation has received the approval and indorsement of President Taft and his predecessor in office, President Roosevelt; of Secretaries of War Root, Taft, Wright, Dickinson, and the present Secretary; of the Chief of Staff and the Chief of Ordnance, United States Army; the Chief of Division of Militia Affairs; the National Board for the Promotion of Rifle Practice in the United States; the National Rifle Association of America; the National Guard Association of the United States; the commander in chief of the Grand Army of the Republic; the president of the National Civic Federation; and many other organizations and prominent citizens throughout the country.

This alone should show its worth and should require no other recommendation. The necessity for this legislation is apparent.

The purposes of this act are not only to create universal knowledge of the military arm among citizens, but to revive the almost lost art of rifle shooting as a pastime in this country, for rifle shooting bears too important a relation to our national defenses to be neglected.

There has always been in this country, and always will be, unless we should have an unusually bitter lesson, a strong prejudice against a large standing army, and while this feeling exists it will always be necessary for the country to depend on volunteers.

If we are not suicidal in our military policy, we will see to it that these volunteers receive some measure of military training, and it is extremely desirable that as many young men as possible should be taught the use of the Army rifle.

The target practice of the National Guard does, in a small way, accomplish this, but it must be borne in mind that the personnel of the guard changes about once in every three years. These men having served their term of enlistment return to their several business pursuits and soon forget their military training. If they received encouragement, no doubt many of these young men would gladly avail themselves of an opportunity to continue their rifle shooting in clubs, if it could be done without being a serious drain upon their pockets and time.

Unquestionably a weak spot in our military establishment is the lack of training for that portion of our citizens who would make up the major part of our armies in case of war. All military authorities agree that in case of a war with a first-class nation we would have to mobilize not less than 500,000 troops. Of this number we could not hope to have more than 150,000 trained or partially trained soldiers in the United States at the outbreak of war, representing the regular services and the National Guard at peace strength; the balance would have to be recruits. Nor is that all. If the war was of any consequence, probably double the number would be required. This would mean in all 850,000 untrained men.

Shall we repeat the experience of the Spanish-American War and take to the front Volunteers who have never even had a rifle in their hands until they enlisted? A statement was made by Maj. Gen. Joe Wheeler, of the Volunteers, that not more than 15 per cent of his division had ever fired a military rifle before landing in Cuba. What a crime against humanity this would have been if the war had proven a serious one. Has any nation the right to permit the untrained patriotic citizen to take up arms without at least preliminary training in their use? Given a reasonable amount of practice with the rifle our American become an expert shot more quickly than a citizen of any other country.

National conditions fur such practice having disappeared with the building up of our country, it is the duty of the Government, for its own protection and the safeguarding of its citizens, to provide means for instruction in the use of the rifle.

Results of an investigation to ascertain how many Americans in different branches of the service, as well as civilians, received instruction in rifle practice during the year 1910 furnishes food for thought.

Records of the War Department show that during that year 29,230 members of the Regular Army, exclusive of those in the Philippines, received rifle instruction, of which 17,473 failed to make the qualifying score.

During the same year the Navy instructed 35,000 men and the Marine Corps 4,400 more. In the Organized Militia 51,749 were given rifle instruction, of which 20,630 failed to qualify as marksman. There were also 40,000 who were not even taken to the range.

This makes a total of 120,379 men in the regular military service of the United States who received rifle instruction of more or less degree during the year. To this might be added 3,000 members of civilian rifle clubs. There could also be counted 7,710 students in colleges having a military department, who were given a limited amount of instruction.

(It is interesting to note that these 7,710 students in the military departments of universities and colleges are all that received instruction out of a total enrollment of 25,320, and yet these institutions are receiving large subsidies from the Government in return for the carrying on of military instruction.)

In the aggregate this will give us a total number of male citizens between the ages of 18 and 45 who practice with the service rifle during one year of 132,089 out of a total male population of the enlistment age of 16,000,000.

One important fact should be taken into consideration with regard to these figures, and that is, that nearly 40 per cent of these men are turned back annually into private life to forget what they have already learned of this important feature of national defense. A large percentage of this class drifts to the large cities. If they were enrolled into rifle clubs they could be kept track of and would continue their shooting and thus be much more efficient as volunteers.

Rifle clubs, however, well organized are useless unless given places whereon to practice, and to do this there must be established rifle ranges near large centers of population; ranges that should be owned and controlled by the Government.

The National Rifle Association of America has spent over 10 years in organizing and promoting rifle clubs throughout the country. The association now acknowledges that the work has been more or less of a failure and that rifle shooting as a pastime in this country is rapidly dying out.

Extracts from the report of the secretary of that association for the year 1911, covering the subject of rifle clubs are appended herewith. His deductions are such as should cause serious thought on the part of those who are interested in the welfare of our country and our future security.

It is doubtless true that there is far more rifle practice than in former years in the National Guard, but the closing of old ranges has necessitated the building of new ones remote from the large cities, which has greatly increased the expense of target training through transportation costs and making it more difficult to carry on practice.

There is no surer way to get results than by beginning with the schoolboys. Already the National Rifle Association of America has done considerable work along these lines and has organized over 100 clubs in public and private schools throughout the country. The work has been, however, greatly hampered by the lack of funds, and a great deal of the good which has been accomplished has been lost through the inability to keep the work going.

That the training of the youth of a country in the national arm is a fundamental principle of national defense is recognized by every nation in the world, and every nation but our own is striving to instruct its boys and young men in the use and knowledge of the national arm of the country.

Some nations go so far as to compel every able-bodied boy to take a course in marksmanship. Such knowledge once instilled into the minds of the youth will never be forgotten. The boys in the public schools once interested in their rifle work will continue it in the university or civilian clubs. Often they will naturally drift into the National Guard, and therefore the proper promotion of this work will indirectly be a great help to enlistments in National Guard organizations.

The Ordnance Department of the Army has on hand about 300,000 model 1898 .30-caliber magazine rifles, popularly known as the Krag, and 34,000 carbines. It is no longer necessary to hold a very great number of these arms for a reserve, and they are available for issue to rifle clubs in case this legislation becomes law.

For the first year or so it is estimated that such issue would not amount to more than ten to fifteen thousand rifles. The principal item of expenditure in putting into operation plans to promote rifle shooting through rifle clubs would be that of ammunition. It is estimated that this issue the first year would amount to about 100,000 rounds, figuring on a basis of 100 rounds to each club member. This would cost in the neighborhood of $25,000. This amount would naturally gradually increase, but during the first few years the money not expended for ammunition could be used advantageously in range construction.

Very respectfully,

Robert Shaw Oliver,
Assistant Secretary of War.
President National Board for Promotion of Rifle Practice.

The Secretary of War.

Extracts from the Report of the Secretary of the National Rifle Association of America for 1911.

RIFLE CLUBS.

In the promotion of rifle-club work we have encountered difficulties on every side. On the surface we have apparently made more or less of a success. Clubs have increased in number, it is true, but when the question is gone into very deeply it will be seen that we have only trifling results, taking into consideration the size of our country and the importance this work bears to national preparedness.

During the past year 18 new civilian clubs have been organized and affiliated with our association; 1 located in Alaska, 1 in the Canal Zone, 10 west of the Mississippi River, and only 6 east of the Mississippi, of which 2 are gallery clubs. During the same period we have practically lost 15 clubs, 10 of which are east of the Mississippi River.

This further bears out the statement which I have made elsewhere in my report—that rifle shooting as a pastime is rapidly dying out in the eastern part of our country.

We now have on our rolls 93 strictly civilian clubs, with a membership of 3,548. Of this number 3,000 had rifle practice of some form or other during the past year, but only 45 qualified as expert, 41 as sharpshooter, and 236 as marksman, under special course C of the War Department, indicating slight use on the rifle range of the service rifles purchased by these clubs.

One of the objections which we have heard brought against the rifle-club movement is that the great majority of the members are older men and consequently would be of little value as volunteers in case of war. On making a special canvass of this point I find that 2,200 of the above members are within the enlistment age.

One other point in regard to civilian rifle-club members which I wish to specially emphasize is the fact that of the total membership of our civilian clubs I found on investigation that 1,175, or 30 per cent, were men who had served one or more periods of enlistment in the Army, National Guard, or Volunteer service.

Elsewhere in my report I have shown the approximate number of men who are passing through the military service and return to civil life each year. No better class of men could be found for an efficient reserve to the Regular Army. If this movement was properly fostered by the Government, instead of 3,000 civilian riflemen we could have anywhere from 30,000 to 50,000 of this class trained in the use of the service rifle.

Canada has a well-organized system which make the rifle clubs of the Dominion a reserve for the Dominion forces that may well be considered by this Government.

That the rifle-club movement in the United States is a failure is owing to two causes, the first and foremost being a lack of outdoor ranges, whereon rifle firing can be carried on. At the present time there are only 40 rifle clubs in this country, exclusive of the foreign-American clubs of the schuetzen class, who have outdoor ranges, owned or leased by the club. There are 30 or more clubs who are able to get a small amount of practice on Army or National Guard ranges. Some of these clubs are able to get this practice, however, only at those times when the ranges are not in use by the Army or militia, which in most cases is when it is impracticable for the rifle clubs to use them.

This lack of ranges is particularly noticeable east of the Mississippi River, where the growth of the population in large cities has forced the closing of the ranges in and near them, with the result that rifle firing is now confined to one or two State ranges, often available only for the use of the National Guard.

What is needed more than anything else in the military line in the United States [illegible]he construction of rifle ranges by the Government near large centers of population. Every year that this is put off only increases the ultimate cost. It probably will be impossible after a time to acquire ranges for long-distance shooting, and we may have to come to the shorter ranges, protected by mantles, such as are in use on the Continent.

After the Government has acquired ranges the next move must be the free issue of arms and ammunition. We then will be in a position to see the movement grow and expand, and it would not be long before we would have built up in this country an organized reserve of qualified marksmen of enlistment age.

The law passed in 1905 authorizing the sale of service arms and ammunition to rifle clubs has not proven effective in stimulating civilian rifle practice. Since the law went into effect 1,000 model 1903 service rifles have been sold to clubs. My belief is that very few of these rifles are being used for the use intended—target practice—and that a great many have passed from the hands of the original owners. Under the present law the Government has no way of compelling the purchasers of these rifles to use them in target practice, whereas if rifles are "issued" to clubs for the purpose of target practice, and they were not used for that purpose, they could be withdrawn and the club's charter canceled.

The National Rifle Association is indebted to the Ordnance Department for many courtesies. The department has done all it could under the law to help the cause. By order of the Secretary of War a certain number of new "Krag" rifles were set aside for sale to our rifle clubs at the price of $10 each, and ammunition for same at the price of $15 per 1,000. Our club members seem to prefer the latest model, however, as 314 model 1903 rifles were purchased during the last year as against 69 "Krags"; 97,250 rounds of ammunition for both models were purchased by rifle clubs during 1911.

I would recommend that the question of legislation for the building of ranges be again taken up, or if the rifle-practice bill now pending in Congress should become a law, that the greater part of the appropriations carried therein be devoted to range building for some years to come. If the Government does not do something along these lines, the only alternative is to encourage the organization of miniature rifle clubs like they have in England. Gallery shooting with small-caliber rifles is not of great value, taken from a military standpoint, but it would be better than nothing at all. Experience has shown that men who keep up their gallery work during the winter produce better results on the outdoor range in summer, which goes to show there is some value in miniature rifle shooting.

COLLEGE CLUBS.

College clubs show a falling off from last year. Then my report showed we had enrolled 38 clubs. We now have 36, although 8 new clubs were organized and affiliated during the year, showing that 10 have dropped out. Of our 36 clubs 27 are in colleges and universities having a military department where an Army officer is detailed as professor of military science and tactics, and 9 are in institutions that do not have a military department and have no Army officer detailed.

The success of these clubs in institutions having military departments depends almost entirely upon the interest and cooperation given by the Army officer there detailed. As a rule these officers have more than enough to keep their attention in their ordinary routine duties and rifle shooting is often neglected and considered of little importance.

The excuse is given in most of the institutions that the very limited time that is given over to military instruction will not permit of rifle shooting being taken up.

My remarks in regard to the lack of rifle ranges apply just as much to this college work as to the civilian. In the 95 institutions carrying on military instruction, only 69 have outdoor ranges available. This may account in a large measure for the fact that although the total enrollment in the military departments of these institutions is 25,320, only 7,710 were given range practice during the past year. A much larger number were given gallery practice. In fact, the records show that 17,675 fired on the gallery ranges.

Gallery work has been greatly stimulated by the carrying on by our association of intercollegiate rifle matches through the organization of intercollegiate leagues. In fact, complaints were made that too much interest was taken by the institutions in these intercollegiate matches; that they had a tendency to develop a few experts in rifle shooting at the expense of the many. Whether this is true or not, the results show that these leagues were instrumental in starting the work in institutions where rifle practice had not been carried on before.

SCHOOLBOY RIFLE CLUBS.

There is a marked falling off in the number of our schoolboy rifle clubs for the year ending June 30, 1912. The fiscal year for these clubs begins September 1, with the opening of the school year, and this practically means the reorganization of new clubs at the beginning of each school year on account of the old members dropping out who have graduated or who have left school.

This time a year ago we had 76 clubs on the roll. At the present time we have only 50 such clubs who have completely organized and made their annual report, of whom 20 are clubs in military schools, 25 in public high schools, and 5 in private schools. This shows a loss of 26 clubs from last year.

The amount of shooting has also decreased, as only 797 "junior marksman's" qualifications were reported, as against 1,047 last year.

This decrease in schoolboy clubs is due to four causes, the principal one of which is the lack of ranges; the second reason is the difficulty in getting competent instructors to take charge of the boys, as required by our regulations; the third, the cost of purchasing rifles and ammunition; the fourth is the opposition encountered from the school authorities. This opposition seems to be almost universal throughout the country.

New York and Washington are notable exceptions to this rule. In both cities this work has the hearty sanction and cooperation of the school authorities and rifle shooting is one of the recognized sports in the school, and the school letter is given to the members of successful rifle teams, the same as in other branches of athletics.

In Greater New York there is a subtarget gun machine installed in each school, and the rifle-shooting department is under the direct supervision and care of a faculty member detailed for that purpose. In addition to which there is the public schools athletic league, which assumes direct control of the shooting.

In Washington during the past year there has been organized an interscholastic rifle-shooting league, which will have supervision and control of the shooting in the schools, and in three of the high schools rifle ranges have been built for the use of the rifle clubs. Considerable shooting is carried on in the four high schools of Denver, Colo., and in Portland, Me., the two high schools have ranges, and rifles were purchased by the school authorities.

Philadelphia has an interscholastic rifle league that carries on a series of competitions between these schools. Here they are also considerably handicapped for the lack of ranges. In Baltimore, where the work started with a great deal of enthusiasm last year, it is rapidly dying out, owing to the lack of competent instructors to take charge of them and opposition from the school authorities.

There is now only one schoolboy club alive of the four that were organized in 1910.

In connection with this work I would again suggest that schoolboy work would be greatly facilitated if the Ordnance Department of the Army would manufacture portable gallery ranges; these ranges to be issued in units of one complete range, including a back stop with wires and wheels for the trolley system, and simple instructions for installing. Such a portable range could be manufactured at a cost between $40 and $50 a unit, and would be easy to install in any room where 60 or 75 feet in length could be secured. This would do away with a lot of technical specifications on range building, which is more or less Greek to the average boy. I think that if this could be done a good many schools would become purchasers of such ranges.

Another feature greatly needed is a uniform gun for this work. At the present time there are no less than 8 to 10 different makes and styles of rifles being used by the boys in their work.

The Government has about 34,000 "Krag" carbines on hand, which would make an ideal arm for schoolboys, as they could be used for both indoor and outdoor work; for indoor work by using an adaptor and a revolver cartridge or gallery loaded ammunition. It has also been suggested by the Chief of Ordnance that .22 caliber barrels could be put on these rifles at small expense.

This country greatly needs an up-to-date cadet rifle, preferably a miniature of the service rifle. Nearly all foreign countries manufacture a miniature army rifle for their cadet corps.

This work among the schools will never amount to a great deal until we are in a position to appoint a competent man in each city to take charge of the work and to devote most of his time to it. This, of course, would require paying such a man for his time and expenses.

The great trouble that we have is to find such men to volunteer their service, and although many of our members would like to take the work up they can not afford to do so on account of the time required. This especially applies to National Guard officers who find that the increased responsibilities of National Guard matters takes about all of the leisure time they have.

The outdoor work among the schools has amounted to very little during the past year, owing to the same difficulties encountered by the college and civilian clubs—the lack of ranges. The New York schoolboys had no opportunity to shoot on outdoor ranges, and as far as I know, the only outdoor tournament held in the country was held here in Washington. Through the courtesy of the Navy Department the Marine Corps range at Winthrop, Md., was put at the disposal of the National Rifle Association and about 200 boys were taken down and put through a course of instruction by the Marine Corps officers and men stationed at that place. Accompanying the boys were the superintendent and assistant superintendent of schools, the commandant of cadets, and several of the high-school principals. The order in which the work progressed, the lack of rowdyism, and the discipline shown by the boys was an object lesson which greatly impressed the school authorities.

MEMORANDUM FROM THE GENERAL STAFF, UNITED STATES ARMY.

NOVEMBER 7, 1911.

(*a*) The issue of old-model rifles, carbines, and appendages and the appropriation of funds for the instruction of schoolboys in rifle firing.

It is believed that old-model rifles and carbines may be put to no better service than the issue proposed in the bill herewith. This issue, in fact, allows the productive use of material which has lost its primary usefulness.

It is axiomatic that an army to be successful must know how to shoot, and advancing arguments in support of this axiom would be simply the reiteration of platitudes.

However, the advantage to the Government of training our young men in the art of using a rifle is not so well understood and the pertinent facts will be advanced.

Our Government is opposed fundamentally to a standing army of a proper size to provide for the national defense, and for a war of magnitude reliance must be placed on a hurriedly mobilized army of Regulars, militia, and Volunteers; the number of men with little military training will predominate.

This has been the policy always, without any steps being taken to insure a really efficient force for the initial stages of the war—these stages are becoming more and more important with each succeeding conflict.

Within the last few years much has been done to assist the States in the development of the militia, and more is being contemplated. But this is insufficient, as is shown by the following figures. For a war of magnitude an army of 450,000 at least will be required at once. This will necessitate expansions approximately as follows:

Regular Army	100,000-150,000
Organized Militia	125,000-150,000
Volunteers	0-150,000
Total	225,000-450,000

which indicates the necessity for an influx of recruits equal in number to those under arms in peace. The effect of this on efficiency may be imagined unless these recruits know something beforehand of the military profession, and especially of rifle firing.

A large percentage of these initial recruits and others to provide for the losses and to augment the forces will come from that sturdy American class which attends the public schools and which is the great bulwark of our democratic institutions. The proof of this is to be found in the history of the Civil War, wherein more than 1,000,000 young men of less than 25 years were employed.

History is replete with examples where such raw levies have failed, but only few instances where they have been successful initially have been recorded, and such success has been attributed to early familiarity with the rifle. The most recent example in point was the army in South Africa, which has been characterized as a "modern militia army," and its successes have been attributed largely to a knowledge of woodcraft and of the rifle acquired in youth. The woodcraft we can not get, but rifle firing is within our grasp, requiring some endeavor and a comparatively small appropriation of funds.

From the foregoing it appears that a heavy asset in our national defense is a familiarity of our young men with the rifle and its use.

The question then is presented, How may this best be brought about? The answer is simple, to wit, by introducing instruction in rifle firing in our schools (principally public).

This in turn may be accomplished by the cooperation of the National Board for the Promotion of Rifle Practice with the school authorities.

It is believed that the final quid pro quo to the General Government for any funds appropriated for this purpose will be far greater than that for funds appropriated for other similar purposes. In addition to being of great advantage in mobilization for war, the instruction proposed will be of immense benefit in time of peace to the Organized Militia, in that many of its recruits will have had preliminary instruction in rifle firing.

Instruction in the use of the rifle may be divided into two parts—aiming and gallery practice and range firing. When a complete mastery of the first is obtained with a small-caliber service rifle proficiency in the other follows readily, so that the impossibility of having range firing for many of the public-school students does not militate materially against the proposition.

Assuming only 15 per cent of the boys in the elementary and all of those in the secondary schools available, there would be under instruction each year approximately—

Elementary	133,000
Secondary	115,000
Total	248,000

These numbers are based on eight and four years, respectively, as the periods to complete the elementary and secondary work in the schools.

In four years there would thus be in the United States approximately 1,000,000 young men familiar with the rifle, many of them being experts therewith, and the number would be increased about 250,000 every year thereafter.

It is not anticipated that these figures could be realized at once, but they indicate what should be worked to.

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H. Liggett,
Lieutenant Colonel, General Staff,
Acting Chief, War College Division.

W. W. Wotherspoon,
Brigadier General, United States Army,

What Other Nations are Doing to Promote Rifle Practice.

FRANCE.

France, in 1893, added instruction in rifle practice to the preliminary exercises already taught to the boys in the primary schools of 10 years of age and upward.

During the year 1908 she expended $100,000 for ammunition alone for schoolboy rifle clubs. Three departments of the Government take active interest in the development of marksmanship: The war department, through the issue of arms and ammunition; the department of the interior, through its pecuniary help; and the department of public instruction, by encouraging the development of rifle exercises in the schools.

Last year the pupils of not less than 862 public schools took part in the team match for the sixth national championship of the primary schools of France. Teams shot on their home ranges under strict supervision. The conditions being, teams of five, each boy firing five shots at a distance of about 40 feet; the target being reduced, the bull's-eye measuring less than 2 inches; possible 50 for the individual shooter, 250 for the team. One hundred and twenty-nine schools scored 200 or better, the winning school making a score of 247.

In France the very life and development of target practice is intimately connected with the existence and progress of the National Union of Shooting Societies of the country. That organization has been in existence since 1886 and to-day numbers 2,200 associated societies with a membership of about 300,000. The union carries on a systematic course of target practice among the schools, and last year 2,500 schools took part in the annual championship contests.

The Government issues rifles and ammunition free to rifle clubs and appropriates annually to the national society $12,000, which is used for prizes, medals, etc., issued to clubs and schools.

In addition to the ammunition issued free to rifle clubs, the Government allows the clubs to purchase cartridges at a very small cost. The Government also appropriates $10,000 annually for the annual competition. In the schools boys under 17 years of age are furnished with a miniature rifle for target practice, but all others over that age use the regular service arm.

GREAT BRITAIN.

In Great Britain very little was done to develop rifle shooting among the schoolboys until Lord Roberts, a few years ago, by his able and persistent advocacy, persuaded a few schools to attempt the introduction of marksmanship into their curriculum, but the attempt from a national standpoint was unsuccessful on account of the difficulty in acquiring ranges, arms, ammunition, and the lack of Government support.

England is essentially a country of private schools, and nearly all of these schools maintain cadet corps in which rifle firing is taught, and each year there is a contest between these school cadet corps for the Lord Ashburton shield which arouses considerable enthusiasm. The school day of the great Bisley range, which is located about 30 miles from London, brings forth from 2,000 to 3,000 cadets, all using the service rifle. All of this work, however, is carried on at the expense of the schools or public-spirited citizens.

The Government of Great Britain, though not making any direct appropriation to the national rifle association of that country or to any of its numerous associations or to the schools, recognizes the authority of the National Rifle Association of Great Britain in all matters connected with target practice outside of the regular army.

It donates each year to the national association 500,000 rounds of cartridges for use at the annual contest held at Bisley and furnishes the Bisley meeting with soldiers to run the matches and camp equipage for use of pupils during the contests.

The National Rifle Association of Great Britain is the wealthiest national rifle association in the world and has an annual income, which last year amounted to nearly $100,000, received from the following sources:

Voluntary subscriptions from banks, business man, and public-spirited citizens	$17,175
Donations for prizes	12,555
Received from entrance fees in matches	50,918
From rental of targets and charge for practice	11,258

Affiliated with the national association are about 200 associations and nearly 2,000 rifle clubs, all of whom pay annual dues.

Rifle shooting in Great Britain is greatly stimulated by the personal patronage of the King and royalty generally. Prominent men of the country realize its value as the means of strengthening the national defense, and subscriptions are gladly given to help the cause.

CANADA.

In Canada a course of instruction in marksmanship has become a part of the curriculum in the public schools.

That grand old citizen of Canada, Lord Strathcona, donated $100,000 for the carrying on of this work, including physical and military training. The Dominion Rifle Association, the national association of Canada, receives annually from the Canadian Government a subsidy of $15,000, besides an allowance of ammunition amounting to 100,000 cartridges each year. Rifles and ammunition are issued free to rifle clubs. These clubs are organized as a military company and are liable for service as a company in case of war.

AUSTRALIA.

Australia has a reserve force of 50,000 civilian riflemen and appropriates annually $500,000 for ammunition for their practice. The railroads of Australia show their patriotism by giving free transportation to members of rifle clubs when traveling to and from the rifle ranges.

A feature of the work in that country is the organization of cadet corps in all the public schools, and in this way she now has organized 40,000 schoolboys, who are furnished arms and ammunition free by the Government and receive instruction in marksmanship.

NEW ZEALAND.

New Zealand is fostering this movement by assisting in the erection of miniature rifle clubs. At these ranges schoolboys shoot from a distance of 25 yards, and .22-caliber rifles are used. Rifles and ammunition are furnished free by the Government. The practice at these ranges will be, so far as possible, under natural conditions, so that it will serve as a preliminary introduction for practice on the outdoor ranges. The boys go into camp annually, when rifle shooting is carried on as a part of their military training. The Government issues badges to those boys who qualify.

HUNGARY.

The Government within the last few years has established a course of practice in all universities and public schools. Hungary owes much to one of its patriotic citizens, Nicholas de Szemere , the originator of target practice for young people of Hungary. In 1902 he organized at his own expense the first course of instruction in rifle practice for young men. He enrolled 567 youths in his classes. On his own estates he built a magnificent rifle range and threw it open to the public with the words: "I have built this range for the Hungarian young men in order to give them an opportunity to defend their native soil."

In 1907 the president of the Hungarian Rifle Federation, a deputy of the Hungarian Parliament, was authorized to visit the principal cities of the country and organize rifle clubs. His efforts were crowned with success everywhere he went, and with the cooperation of the towns and cities themselves ranges were built and societies organized, with the result that during the year 1909, 6,656 young, men received a thorough course of instruction with the rifle.

SWEDEN.

The Government of Sweden appropriates annually the sum of $153,000 toward civilian rifle practice, which is apportioned among the rifle clubs for the purchase of ammunition, building of ranges, for prizes, and such other necessary expenses connected with the shooting.

In 1905 there were 1,850 rifle clubs throughout the country. The officers of the active army are untiring in their endeavors to increase the efficiency of rifle club organizations. For this purpose they are elected to membership in these clubs, and here they act as instructors in marksmanship, and in this respect they render excellent service. These officers are also used for the purpose of delivering lectures before the said clubs.

ITALY.

In 1882 the Italian Government began the systematic teaching of all its citizens in the use of the military rifle. Total or partial exemption from military duty is given to civilians who have profitably taken shooting lessons for two years before the call to arms. A student can not get his diploma or attend any university unless he presents his shooting booklet, showing that he has attended the shooting exercises of his local society.

The Italian Government details a commissioned officer of the regular army to every shooting society to act in a supervisory capacity. There is a rifle range in every county, the expense of which is borne equally between the Government and the county. This is the law of the country. The Government gives each society, according to the number of members, sufficient rifles and sells to the societies ammunition at cost price. The Government has a special rifle-club cartridge of much lower velocity than the service cartridge which it issues to clubs. All the shooting of the clubs is done under the supervision of the army officer.

Every year there are community matches, every two years intercounty matches, and every five years a national match. To the national match the Government issues free transportation to all participants. Thirty thousand men took part in the last national match, and 2,000,000 cartridges were used. The King of Italy fired the first shot, which opened the meeting. The giving of prizes is attended by high civil and military authorities and is made a great holiday event.

SWITZERLAND.

The Swiss system of Government aid to civilian target practice is somewhat as follows: Under the Federal law each commune must furnish a rifle range, and there are now 2,800 such ranges in Switzerland. The marksmen are organized into shooting societies. The Government supplies these societies with rifles and ammunition free. Every rifleman who makes a qualifying score is paid the equivalent of a day's pay for a laboring man by the Government.

In 1902 there were in Switzerland 3,600 shooting societies, containing 214,000 members, of whom 84,309 qualified. Twenty-three million rounds of cartridges were expended. There are also a large number of school cadet corps, who receive a Government allowance of $1 per capita for ammunition.

The population of Switzerland is about 3,500,000, less than one-thirtieth of ours. If we should train our citizens in rifle shooting on the same ratio we would have in the neighborhood of 5,000,000 trained riflemen at our disposal for national defense.

HEARING ON THE BILL HELD AT THE LAST SESSION OF CONGRESS.

A hearing on the bill was held by the Committee on Military Affairs Thursday morning, January 12, 1911.

A delegation of about 30, including Maj. Gen. Wood, representing the War Department, several adjutants general, college professors, and others interested in the bill, attended.

The speakers were: Gen. George W. Wingate, president of the Public Schools Athletic League of New York; Lieut. Gen. John C. Bates, president of the National Rifle Association of America; Gen. C. R. Boardman, adjutant general of Wisconsin; Maj. Gen. Leonard Wood, Chief of Staff, United States Army; Gen. Carl A. Wagner, of Michigan; and Prof. William Libbey, of Princeton University.

Gen. WOOD. Mr. Chairman, I have read this bill, am familiar with it, and I thoroughly approve it. The knowledge of the use of arms has passed out of this country, except in a few sections in the West, and it is of the utmost importance that we should have in the population of the country as many men as possible who are familiar with the use of the rifle. There is no better opportunity of securing this familiarity than through the means provided in this bill; that is, by the establishment of rifle clubs in civil life and the establishment of rifle practice in the public schools. * * *

The CHAIRMAN. You think that a limitation should be placed on the amount allowed to be spent and that the War Department should not be authorized to spend beyond the amount so authorized?

Gen. Wood. Yes, sir. I think that after a short trial of this thing you will find that the benefits are so great that you will all believe that it is one of the best military expenditures you could make. The results will be so positive and far-reaching as anything you can do.

Mr. Slayden. The difficulty which occurs to me is that if, as Gen. Wingate says, rifle shooting possesses a strong fascination about it, you may arouse a public demand for it that will make the appropriation almost unlimited.

Mr. Sulzer. Do you think it would be cheaper, as a matter of national defense, than increasing the standing Army?

Gen. Wood. It would be better to have a standing army with men that can use the gun.

By this means the use of the rifle can be thoroughly acquired and also the care of them, and it would give you all over the country a lot of youngsters available to go right into the ranks, who can shoot straight, and you will get it at very small cost. The bill provides $100,000 and will afford the means of securing a large amount of preliminary instruction.

Mr. Sulzer. Would it not create a demand for war?

Gen. Wood. It will not create a demand for war. It is about as reasonable to expect that a dentist who pulls teeth will acquire a desire to pull his own teeth as it is to think that a man who shoots well with a rifle will want to go out and be shot at.

STATEMENT OF GEN. C. R. BOARDMAN.

Gen. Boardman. Mr. Chairman, I have been asked to say something in reference to this bill so far as it may possibly affect the matter of recruiting for the National Guard of the country. I can not speak from the long experience of Gen. Wingate, because in the West this movement has not taken the proportions that it has in the East. I do not know that such a provision would be very helpful in recruiting men for the service, so far as numbers are concerned, but so far as the quality of the men is concerned it is an important matter.

We feel in Wisconsin, and it is the feeling all over the country, that this should be a national burden, for the reason that it is for the benefit of the entire United States, just as much in this way as it is to improve the waterways of the country; it is as much the concern of the National Government as the handling of interstate commerce or any of these matters which are of no greater common interest to the United States than this. We have another reason for our advocacy of the passage by the National Government of such a measure, in that an award coming from the National Government, no matter of how little intrinsic value, is a far greater stimulus to exertion than anything coming from the State. We found that out in the rifle practice on the national ranges; that the qualification under the requirements of the War Department, carrying with it a little insignia costing 15 or 25 cents, from the War Department, is more valuable in the eyes of the average men shooting than a gold medal presented by the State.

So far as the State is concerned, it can train up a small number of men sufficient to meet every emergency. But when it comes to the question of raising and training and instructing a larger number of men than is needed for any ordinary occurrence in the State and to hold them in readiness for the service of the United States up to the qualifications that the War Department requires and will require, it is taking a heavy responsibility. Anything that will attract young men to the guard should be encouraged. Then if we should succeed in establishing through the high school an entire system of rifle practice it would unquestionably bring to the ranks of the guard all over the country not only a considerable number of men, but, as I have said, young men of the best quality.

Mr. Chairman, you wear the badge of the Loyal Legion, and you are aware of the fact that our best soldiers are young men between the ages of 18 and 20 years. These young men compose the strength of the guard to-day. They may be called "kids," but I remember when Gen. Bragg saw my little regiment and I said to him, "Don't you think they look like a lot of kids?" He replied, "They look just as we did in 1861."

These are the men we must get; we do not want the ordinary men who do not think for themselves, because that is contrary to the military traditions of our country. If the volunteer of the United States has shown himself to be patriotic and capable in the field, it is because of his ability to think for himself. It was said by foreign military authorities of the American volunteers in the Philippines that continental Europe had no standard or criterion by which to judge them, because the American volunteer was always dangerous. And these are the men we want to attract to our ranks—boys that are educated to think for themselves; and we believe we can do it by restoring this measure, and that the United States can at a very small expense to itself help materially.

Gen. Wingate explained in detail the work being done in New York City by the Public Schools Athletic League rifle shooting branch, stating that the high-school boys were being trained for the service of the country in time of war. He also spoke of the great trouble in the country to-day of getting recruits for the National Guard, and said:

You passed a bill recently by which you made the National Guard a part of the Army. The standard is being raised, and it is not an easy matter to get the men. The young men we want are not attracted to the service. We take these high-school boys and train them to shoot, and that brings them into the guard.

Prof. Libbey, of Princeton, said in part:

You must have men of brains, men of ability, to study the problems of the modern rifle, which is not, as it used to be, a gun that carried 100 or 200 yards, but a gun that carries 2 miles, and the battles of the future will be fought out of seeing distance, and the man behind that gun should be able to make it do what it should do.

A great many of the half million of young men in this country are not prepared to stand the expense of this training. It is an expensive matter to them, and they can not afford it. At Princeton 10 per cent of the students are earning their own way through college, and they have to account to themselves for every cent they spend. You can not expect these men—and most of them would develop in a most interesting way—to pay this expense. They can not do it, because the raising of money to meet their expenses at college is a very serious matter with some of them. I think that burden should be taken off of them. In every case where I have had an opportunity I have tried to do that by raising the money in other ways.

I think, gentlemen, you will make no mistake in taking men at that age and teaching them the use of the modern rifle. They would be interested in it, not only because of its scientific aspects, but because of being in this outdoor life and shooting in competition with others. I know by experience. I have used the rifle ever since I was so high, mainly on expeditions out West, but I did not know that it was such an interesting instrument until about 12 years ago, when I went down to Sea Girt with those men of mine and got out on the range. It became the greatest joy of my life. I do not know of anything I would rather do than to go out at 1,000 or 1,400 yards and see what I can do with that target. These young men like to go; they like to participate in this practice, and it is simply the lack of facilities—arms and ammunition—that prevents them from going into it.

I have a number of telegrams here; I will not take your time by reading them, but they are from college men, men who have been up against this proposition of providing guns and ammunition and providing the expense of taking the teams to the places where matches are held. And that is a tremendous burden, and if you can help us out in any way, you will be doing a service that will be returned a thousand times over in the future.

Cornelius A. Wickersham, son of the Attorney General, who is interested in the organization of an intercollegiate rifle shooting league, telegraphed as follows:

Secretary National Rifle Association of America:

Sincerely hope bill providing appropriation for encouragement rifle shooting will successfully pass committee. It is the thing most needed to increase the interest in rifle shooting of the colleges and universities; formation of new league will be thereby greatly assisted.

Telegram from a former Princeton student:

Secretary National Rifle Association of America:

I have just heard of the bill appropriating a certain sum for the promotion of rifle shooting among the colleges and universities of the United States. Although it is impossible for me to appear in person before the committee and urge with such weight as my arguments might have that this bill be favorably acted upon, I am taking the liberty of putting certain views before you with the request that you present them to the honorable committee should you see fit. I was a member and later captain of the rifle team of Princeton University and so feel I am in a position to know certain of the disadvantages under which shooting of all kinds labored at that institution. The first and greatest was the cost of ammunition. This in all forms of shooting is a great expense and limits the men able to shoot to those having large allowances. A familiarity with the service rifle of this country is so necessary under our present system of defense that the men able to acquire proficiency in this art should be not hampered by a question of cost. Again the necessity of purchasing a service rifle is a strain upon the men's purses and keeps an additional number from becoming potential coachers of rifle shooting in time of war. If these two checks were removed the number of men interested would greatly increase, and the advantage of having such a body of trained men to draw upon in times of need is too apparent to require more than passing mention. I further trust that any seeming lack of interest may not militate against the passing of this appropriation on account of the fact that it concerns men in colleges which makes it highly improbable that many persons will appear before the honorable committee to speak in its favor.

Orson D. Munn.

From a former Columbia University student:

Secretary National Rifle Association of America:

Hearing that there is a bill under consideration authorizing the appropriation of $100,000 to be used for the furtherance of collegiate rifle shooting, I am taking the liberty of writing to you to urge you to do everything in your power to secure the passage of this bill. As perhaps you remember, I organized a rifle club at Columbia University in the fall of 1902, the men shooting in the range of the Seventh Regiment and using their rifles. This arrangement although highly satisfactory, could not be continued as the regiment quite properly desired us to furnish our own rifles, and it was not possible to obtain sufficient funds to purchase Krags or new Springfields.

Since that time the club has conducted its practices in various shooting galleries, using light rifles and .22 ammunition, and although considerable interest is still taken, it is no longer possible to hold the interesting matches which could be held when a standard weapon was employed. Several matches were shot with different companies in the National Guard, the season culminating with a match with a team from Princeton University, also using the military rifle, which was, I believe, the first intercollegiate rifle match on record and aroused a great deal of interest at the time.

It is my firm belief that if this appropriation could be secured and the major portion expended in the purchase of arms and ammunition for the various school and college clubs we would find a surprising number of students taking a serious interest in training themselves to become expert shots with the military rifle, and another great stride would have been taken toward perfecting our national defenses.

HAROLD MESTRE.

RÉSUMÉ OF PREVIOUS EFFORTS FOR THIS AND SIMILAR LEGISLATION.

For the last nine years the Government has been making efforts to secure legislation from Congress for the promotion of rifle practice among civilians, colleges, universities, and preparatory schools of the country.

The first bill introduced was in 1902. This bill carried an appropriation of $100,000 and was reported favorably by the military committee of the House, which said in part as follows:

> This committee is of the opinion that the passage of this bill will result in greatly stimulating and encouraging rifle practice among the citizens of the United States. It is along the lines that have been followed by several countries, notably Switzerland and Great Britain, in which, as in the United States, the military education by conscription of the whole male population is not possible. When conscription is not possible, the encouragement of rifle practice as a military sport affords the Government of a free country an opportunity to give to the male citizen, fit for military service, at least a part of the training which is necessary in war.
>
> How important this part is can be shown by numerous instances in history during the last century, where good shots, without discipline, have been able to withstand the finest troops. It is also a part of the soldier's instruction, which would require much time, labor and expenditure, to become proficient in.
>
> A feature of the Constitution of the United States and of the laws enacted under it in 1799, which make all citizens liable for service in the militia, and which encourages the handling and carrying of arms, by establishing the right of every citizen to do so, might well be extended and made the animating spring of a national system of target practice, by which all citizens fit for active service shall be invited to qualify for this important attribute of a good soldier.
>
> No more useful expenditure of money for our national defense can be made than the establishment of places near our centers of population of target ranges, to be maintained by the Government and placed in charge of officers and noncommissioned officers; of the furnishing at cost price or less of ammunition; of the restriction as far as the use of the ranges to men of military age of fitness and physique, and by whom such practice is needed; of the issuing of certificates as marksman to such men, to be in the form of medals to be handsome enough to be prized by the recipient.

The report winds up by saying:

> It is essential that the proposition for Government aid in this matter is with a view of inaugurating in this country an interest in target practice which will eventually produce a system of voluntary firing similar or equivalent to that which now exists in Switzerland.
>
> It will be entirely in accordance with the traditions of our country, which first showed what the rifle was capable of and which gained its independence largely through the familiarity of our citizens with its use.

In 1904 a similar bill was introduced in both the House and Senate; in the former by the then Congressman Dick, of Ohio, and in the latter by Senator Proctor. The House committee reported the bill favorably and it was put on the calendar. In the Senate committee there was a slight delay, owing to amendments proposed by Senator Warren, but the bill was finally reported favorably, although too late to be acted upon by the Senate.

This bill carried an appropriation of $1,000,000 annually, and would have undoubtedly become a law if it had been introduced earlier in the season.

In 1905 a bill carrying an appropriation of $500,000 was introduced in the House by Mr. Morrill, of the Committee on Military Affairs. This bill did not get out of the committee.

In 1908 a bill which is identical with the bill now pending before Congress was sent to Congress by President Roosevelt with a special message urging its favorable consideration.

In 1909 and 1910 greater efforts than ever before were made to secure the passage of a rifle practice bill, with the result that in March, 1910, the Committee on Military Affairs of the Senate reported the bill favorably without amendment and recommended that it be passed. On the following day the Senate passed the bill by a unanimous vote. The sponsors of the bill were, however, unable to get the bill reported from the Military Committee of the House. Several hearings were had before the committee, and apparently there was little opposition to the bill, except from two or three members, and it should have received a favorable report.

EXTRACTS FROM LETTERS FROM SECRETARIES OF CIVILIAN RIFLE CLUBS TO THE SECRETARY OF THE NATIONAL RIFLE ASSOCIATION OF AMERICA.

Extracts from letters from secretaries of civilian rifle clubs which have a bearing upon the proposed legislation.

From the Louisville (Ky.) Rifle and Revolver Club:

> It is our opinion that an issue of Government rifles and ammunition would very greatly increase the interest. A large majority of our members are men of moderate means and can not afford considerable expenditures for this sport. Free ammunition would enable them to shoot a great deal more and would be the means of very greatly increasing our membership, and would, no doubt, greatly raise the average standard of marksmanship and the number of citizens shooting in our community.

From the Los Angeles (Cal.) Cadets Rifle Club:

> If this law passes Congress concerning the issue of "Krag" rifles and ammunition to civilian rifle clubs we can build our membership to 100 men almost at once.
>
> The Los Angeles Cadet Corps represents the city of Los Angeles on official occasions. We have a special permit from the governor to drill under arms and are subject to annual inspection by the adjutant general. At present we use the old .45.70 Springfield rifle, which is of no military value. The mayor, together with five other well-known business men of Los Angeles, is on our advisory board. We would, therefore, be responsible for all arms issued to us.

Alton (Ill.) Rifle Club:

> Your circular letter received, and I note the importance attached to the efforts of the association in trying to establish with the Government sufficient confidence to further our cause. In using as an example the number of members who have seen service I feel quite sure that this is an important step and gladly give you this information, with insertion made as to the number of members in our organization who have seen service in the Regular Army.

Lawton Rifle Association, of Marion, Ind.:

> Our members are composed of Spanish War veterans, some of whom are medal winners in State and National contests, a number of big-game hunters with high-grade records as marksmen, and a strong following of fellows who take great pleasure in target practice.
>
> The three classes of men of whom I speak comprise the make-up of our association. We have the nucleus of a very promising civilian club and have been patiently waiting the action of Congress to offer an inducement by way of an appropriation to put our club on an active basis.

If Congress make the provisions for the issue of arms and ammunition we can in a very short time organize an active club of from 500 to 1,000 men. An unusual interest is manifested here in this work, and it only awaits the action of Congress to determine its success or dissolution.

Minneapolis (Minn.) Rifle and Revolver Club:

In response to your letter and inquiry, I would say that active and past members of the National Guard or volunteers compose the backbone of our organization.

In addition to these members we have a half dozen or so who are in the club primarily because their business is not such as to admit their service in the guard, but who openly say that they have joined the club as the next best way of fitting themselves for rendering efficient service in time of war.

Guardsmen predominate among those active in club work, and I would add that they practically monopolize the outdoor shooting.

Free rifles and free ammunition for this work together with better range facilities give them an advantage against which our civilian members find it practically impossible to contend.

Our shooting is done on the Fort Snelling range at such times as neither the Regulars nor the guard want it—and such times are few and far between.

The expense is the thing which prevents our qualifying more civilian members, and I would state emphatically that unless aid is extended to the civilian shooters they will be reduced to a mere handful of indifferent shots trailing along behind the guard.

An issue of "Krag" rifles in first-class condition and a reasonable issue of free ammunition per capita—say 100 rounds per annum—with the continued sale of "Krag" ammunition at $15 a thousand would do much to further the cause of civilian marksmanship.

In this connection I would state that I believe one of the most important functions of the civilian rifle club movement is to back up the guard.

Hastings (Colo.) Rifle Club:

Referring to your circular letter as to how many members of our club have seen military service I inclose herewith a list of our members who have seen such service and their records.

A canvass of the members shows that there is no one in our club who would under any circumstances serve in the National Guard, owing to the fact that they are so situated that service in the guard is prohibitive, while they would one and all be ready and willing to serve in time of war.

Adrian (Mich.) Rifle Club:

After two years struggling against adverse conditions, the Adrian Rifle Club may now be said to have achieved a permanent organization and its members make up in enthusiasm what they lack in numbers. A little more encouragement from the Government in the way of arms and ammunition would add greatly to its membership and efficiency.

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62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 416.

LEVY OF DUTIES ON WOOD PULP, PAPER, ETC.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

INFORMATION RELATIVE TO DUTIES LEVIED ON WOOD PULP, PAPER, ETC.

JANUARY 9, 1912.—Read, referred to the Committee on Ways and Means, and ordered to be printed.

To the House of Representatives:

On December 8, 1911, the House of Representatives adopted the following resolution:

> *Resolved*, That the President of the United States be, and he is hereby, requested, if not incompatible with the public interests, to inform the House of Representatives whether, since July twenty-sixth, nineteen hundred and eleven, the day of the date of the law known as "An act to promote reciprocal trade relations with the Dominion of Canada, and for other purposes," any customs duties have been levied by the United States upon pulp of wood mechanically ground; pulp of wood, chemical, bleached, or unbleached; news print paper and other paper and paper board manufactured from mechanical wood pulp or from chemical wood pulp, or of which such pulp is the component material of chief value, colored in the pulp or not colored, and valued at not more than four cents per pound, not including printed or decorated wall paper, and when and where in the country or countries of respective export no export duty, export license fee, or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise), or any prohibition or restriction in any way of the exportation (whether by law, order, regulation, contractual relation, or otherwise, directly or indirectly), shall have been imposed upon such paper, board, or wood pulp, or the wood used in the manufacture of such paper, board, or wood pulp, or the wood pulp used in the manufacture of such paper or board; and if so, in connection with such levy or levies of duties, what representations, if any, have been made to our Government by nations other than the Dominion of Canada.

The questions of law now raised in reference to the proposed admission of free wood pulp and paper from European countries with which we have treaties containing favored-nation clauses are two:

First, whether the second section of the act to promote reciprocal trade relations with the Dominion of Canada, and for other purposes, in view of the failure of the Dominion of Canada to pass a similar act, is to be regarded as existing law in full force and effect; and, second, assuming an affirmative answer to the first question, whether the favored-nation clause extends the benefits of the second section of this act to the countries with which we have treaties containing favored-nation clauses. As the treaties are the law of the land and as the reciprocity act is a statute in part at least to become operative upon conditions, the question of the effect of the one upon the other can be better considered in a court of law than by Executive construction.

I have therefore directed that the refusal of the Treasury Department to admit wood pulp and paper and other articles under the joint effect of the Canadian reciprocity act and the favored-nation clauses of the treaties with other countries shall stand as the attitude of the Government, pending the consideration of the two questions above stated before the tribunals regularly appointed by law for the consideration of such questions.

I transmit copies of the reports of the Secretary of State and the Secretary of the Treasury in answer to this resolution.

WM. H. TAFT.

THE WHITE HOUSE, *January 9, 1912.*

TREASURY DEPARTMENT,
Washington, January 2, 1912.

The PRESIDENT.

SIR: I have the honor to acknowledge the receipt of a copy of House resolution 320, adopted December 8, 1911, to the following effect:

> *Resolved*, That the President of the United States be, and he is hereby, requested, if not incompatible with the public interests, to inform the House of Represenatives whether, since July twenty-sixth, nineteen hundred and eleven, the day of the date of the law known as "An act to promote reciprocal trade relations with the Dominion of Canada, and for other purposes," any customs duties have been levied by the United States upon pulp or wood mechanically ground; pulp of wood, chemical, bleached, or unbleached; news-print paper and other paper and paper board manufactured from mechanical wood pulp or from chemical wood pulp, or of which such pulp is the component material of chief value, colored in the pulp or not colored, and valued at not more than four cents per pound, not including printed or decorated wall paper, and when and where in the country or countries of respective export no export duty, export license fee, or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise), or any prohibition or restriction in any way of the exportation (whether by law, order, regulation, contractual relation, or otherwise, directly or indirectly), shall have been imposed upon such paper, board, or wood pulp, or the wood used in the manufacture of such paper, board, or wood pulp; and if so, in connection with such levy or levies of duties, what representations, if any, have been made to our Government by nations other than the Dominion of Canada.

While the language of the resolution is far from clear, I conceive that information is desired upon two points:

First. Has this Government levied any customs duties upon the articles mentioned under section 2 of the act of July 26, 1911, when such articles have been imported from countries which impose no export duties or charges or other restrictions as described in the said section upon said articles or upon wood from which they are manufactured?

Second. If such customs duties have been levied, what representations, if any, have been made to this country by nations other than the Dominion of Canada?

Replying to the first inquiry, I have to say that customs duties have been levied upon importations of certain of the articles above described from the following countries, which, it is claimed, impose no export duties or charges or other restrictions described in the said section:

Germany, Austria, Sweden, Norway, Hungary, Newfoundland, Russia, Finland, Belgium, England.

In this connection I have to invite your attention to a decision of the department, dated October 25, 1909 (T. D. 30064), from which it appears that there is a duty imposed by Finland upon pulp woods, i. e., pine and fir, when exported from that country or dependency; and to another decision, dated July 29, 1911 (T. D. 31783), from which it appears that there are restrictions imposed by Newfoundland upon the exportation of pulp wood cut on Crown lands of that Province. The countries mentioned above, other than Finland and Newfoundland, so far as this department is advised, impose no export duty or charge or other restriction described in section 2 of the act of July 26, 1911. However, the Department of State in all probability is better advised as to this feature of the inquiry than is this department.

Wood pulp, paper, and paper board, when produced in Canada in accordance with the provisions of the said law and the regulations issued thereunder, have been admitted to this country free of duty.

Answering the second question, I have to say that no representations have been made to this department by nations other than the Dominion of Canada, other than informal oral requests for information from representatives of certain governments as to the attitude to be taken by this department in the premises, and as to when the decision would be announced.

For your information I attach hereto copies of the decisions which have been made and published by the Treasury Department in connection with section 2 of the act of July 26, 1911, as follows:

1. T. D. 31772 of July 26, 1911, publishing section 2 of the act of July 26, 1911, relative to wood pulp and paper from Canada, with the regulations thereunder.
2. T. D. 31879, of September 26, 1911, reaffirming the department's practice under T. D. 26804, relative to assessing countervailing duty only on that portion of Canadian pulp or printing paper made from wood cut on Crown lands.
3. T. D. 31890, of September 29, 1911, modifying paragraphs 7 and 8 of T. D. 31772, supra, in order to cover New Brunswick.
4. T. D. 32117, of December 27, 1911, extending instructions in T. D. 31772, supra, relative to wood pulp and printing paper produced from wood cut from the Crown lands in the Province of Ontario to include such products of wood cut on the Indian lands in the same Province.

I also have to inform you that the department is now preparing instructions covering more specifically than heretofore importation of pulp, print paper, and board made from wood produced in the Provinces of Saskatchewan, Manitoba, Alberta, British Columbia, and the Northwest Provinces of the Dominion of Canada.

Respectfully,

Franklin MacVeagh, *Secretary.*

Department of State,
December 22, 1911.

Charles D. Hilles, Esq.,
Secretary to the President.

Sir: In reply to your letter of December 8 transmitting, by direction of the President, a copy of House resolution 320, adopted December 8, 1911, requesting information in regard to the levy of duties on wood pulp, paper, etc., since the date of the reciprocity act of July 26, 1911, and asking what representations to our Government have been made relative to such levies by nations other than Canada, you are advised that the Department of State has received formal representations from the Austro-Hungarian and German ambassadors and the Belgian, Danish, Norwegian, and Swedish ministers, in which, without referring to the specific levy of any duty or charge on articles mentioned in the above resolution, claim is made on the basis of the most-favored nation clauses in their treaties with the United States to the same treatment in regard to the entry of articles mentioned in section 2 of the reciprocity act as is accorded to Canada under that section.

No formal answer has as yet been made by the department to these communications.

I am, sir, your obedient servant,

P. C. Knox.

(T. D. 31772.)

Reciprocity between the United States and Canada.

[Circular No. 48.]

Treasury Department, *July 26, 1911.*

To collectors and other officers of the customs:

1. Section 2 of an act entitled "An act to promote reciprocal trade relations with the Dominion of Canada, and for other purposes," approved July 26, 1911, 3.10 p. m., is as follows:

"Sec. 2. Pulp of wood mechanically ground; pulp of wood, chemical, bleached, or unbleached; news print paper, and other paper, and paper board, manufactured from mechanical wood pulp or from chemical wood pulp, or of which such pulp is the component material of chief value, colored in the pulp, or not colored, and valued at not more than four cents per pound, not including printed or decorated wall paper, being the products of Canada, when imported therefrom directly into the United States, shall be admitted free of duty, on the condition precedent that no export duty, export license fee, or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise), or any prohibition or restriction in any way of the exportation (whether by law, order, regulation, contractual relation, or otherwise, directly or indirectly), shall have been imposed upon such paper, board, or wood pulp, or the wood used in the manufacture of such paper, board, or wood pulp, or the wood pulp used in the manufacture of such paper or board.

2. The provisions of the section above quoted took effect immediately on the approval of the act.

3. Articles entered on and after the taking effect thereof and articles previously imported but for which no entry had been made and articles previously entered without the payment of duty and under bond for warehousing, transportation, or any other purpose, for which no permit of delivery to the importer, or his agent, had been issued, are subject to the provisions of the said section.

4. In order to be entitled to the benefits of said section 2, articles must be entered subject to the following provisions:

(*a*) The exporter must declare on the invoice that the articles are the product of Canada, and that their exportation is not subject to any "export duty, export license fee, or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise), or any prohibition or restriction in any way of the exportation (whether by law, order, regulation, contractual relation, or otherwise, directly or indirectly)."

(*b*) The importer must make affidavit at the time of entry that the articles were produced in and exported directly from Canada.

(*c*) The appraiser must be satisfied and so report on examination that the articles are the product of Canada.

(*d*) The collector must be satisfied that the articles are the product of and direct importations from Canada, and that their exportation is not subject to any of the prohibitions, restrictions, or charges set forth in the said section 2.

5. The Secretary of State has been requested to instruct consular officers in Canada to add to their usual certificate on invoices a specific verification of the exporter's declaration of origin.

6. Under the provisions of said section 2 there will be admitted free of duty at the present time only such of the articles specified therein as are produced from wood cut on private lands, or on such Crown lands as are free from the restrictions, prohibitions, or charges set forth in the said section.

7. Subject to compliance with the regulations herein set forth, free entry will be granted to wood pulp, paper, and paper board valued at not more than 4 cents per pound, manufactured from:

(*a*) Wood cut on any lands, public or private, in any of the Provinces or Territories of the Dominion of Canada, except the Provinces of British Columbia, Ontario, and Quebec. This will only include the Province of New Brunswick until October 1, 1911.

(*b*) Wood cut on private lands in the Provinces of British Columbia, New Brunswick, Ontario, and Quebec.

(*c*) Wood cut on the provincial lands of the Province of British Columbia lying east of the Cascade Range of mountains.

8. Free entry will be denied to such wood pulp, paper, and paper board manufactured from:

(*a*) Wood cut on the Crown lands of the Provinces of Ontario and Quebec, or on the provincial lands of the Province of British Columbia lying west of the Cascade Range of mountains, or on the Crown lands of the Province of New Brunswick on and after October 1, 1911.

9. Printing paper valued at 3 cents per pound or less and wood pulp, which are the products of wood cut on the lands set forth in paragraph 8, will be subject to the countervailing provisions of paragraphs 409 and 406, respectively, of the tariff act of August 5, 1909.

10. News print paper, valued at more than 3 cents per pound and not more than 4 cents per pound, and paper other than news print paper and paper board manufactured from wood pulp, or of which such pulp is the component material of chief value, valued at not more than 4 cents per pound, not including printed or decorated wall paper, which are the products of wood cut on the lands set forth in paragraph 8, will not be subject to the countervailing duties provided in paragraph 409, but will be subject to the regular duties only, provided in the said paragraph.

11. Such news print paper and other paper and paper board valued at more than 4 cents per pound are not affected by this act, but remain dutiable under the appropriate provisions of the act of August 5, 1909.

12. The Dominion of Canada does not include the Province of Newfoundland nor the Territory of Labrador.

JAMES F. CURTIS, *Acting Secretary.*

(T. D. 31879.)

Wood pulp—Printing paper.

Reaffirmance of department's practice under T. D. 26804 relative to assessing countervailing duty only on that portion of Canadian pulp or printing paper made from wood cut on Crown lands.

TREASURY DEPARTMENT, *September 26, 1911.*

SIR: I have to acknowledge the receipt of your letter of the 20th instant contending that if an importation of print paper, the product of Canada, was made in part from wood cut on restricted lands and in part from wood cut on private lands countervailing duty should be assessed on the whole importation.

In reply I have to state that when the similar question first arose under paragraphs 393 and 396 of the tariff of 1897, the department held that countervailing duty must be assessed on the whole importation. In the Myers' case the Board of General Appraisers decided otherwise (G. A. 5592, T. D. 25035 of Feb. 17, 1904). The department appealed (T. D. 25098 of Mar. 12, 1904). The United States Circuit Court for the Northern District of New York sustained the board (T. D. 26659 of July 31, 1905). In T. D. 26804 of October 26, 1905, the department acquiesced, and it has followed the court's decision ever since.

It is the opinion of the department that there is nothing in section 2 of the act of July 26, 1911, incompatible with the long-standing practice above set forth.

Respectfully,

(85245.)

JAMES F. CURTIS,
Assistant Secretary.

Mr. ——— ———

(T. D. 31890.)

Wood pulp—Paper.

Paragraphs 7 and 8 of T. D. 31772, relative to entry of wood pulp, paper and paper board, the products of Canada, modified.

TREASURY DEPARTMENT,
September 29, 1911.

To collectors of customs and others concerned:

Chapter 10 of 1 George V, 1911, of the acts of the legislature of the Province of New Brunswick, entitled "An act respecting the manufacture of spruce and other pulp woods cut on Crown lands," passed April 13, 1911, provides in part that—

"Every timber license or permit conferring authority to cut spruce or other soft-wood trees or timber, not being pine or poplar, suitable for manufacturing pulp or paper, on the ungranted lands of the Crown, shall contain and be subject to the condition that all such timber cut under the authority or permission of such license or permit, shall be manufactured in Canada."

Under date of August 8, 1911, the surveyor general of the Province of New Brunswick stated that it was the custom of the Crown lands department to renew timber licenses annually on the 1st day of August of each year, or as soon thereafter as mileage and stumpage pertaining to each license is paid, and he further ruled that the statute does not apply to licenses renewed on the 1st of August, 1911, or prior to the 1st day of October, 1911. In view of this construction of the provisions of the act by the duly constituted authorities of the Province of New Brunswick, paragraphs 7 and 8 of T. D. 31772 (Cir. 48) of July 26, 1911, are hereby modified to read as follows:

"7. Subject to compliance with the regulations herein set forth, free entry will be granted to paper and paper board valued at not more than 4 cents per pound, and to wood pulp manufactured from:

"(*a*) Wood cut on any lands, public or private, in any of the Provinces or Territories of the Dominion of Canada, except the Provinces of British Columbia, New Brunswick, Ontario, and Quebec.

"(*b*) Wood cut on private lands in the Provinces of British Columbia, New Brunswick, Ontario, and Quebec.

"(*c*) Wood cut on the provincial lands of the Province of British Columbia lying east of the Cascade Range of mountains.

"(*d*) Wood cut on Crown lands of the Province of New Brunswick, under authority of licenses or permits issued prior to October 1, 1911, whether such licenses shall have been issued for the first time or in renewal.

"(*e*) Pine or poplar cut on either Crown lands or private lands in the Province of New Brunswick.

"8. Free entry will be denied to such wood pulp, paper, and paper board manufactured from:

"(*a*) Wood cut on the Crown lands of the Provinces of Ontario and Quebec or on the provincial lands of the Province of British Columbia lying west of the Cascade Range of mountains.

"(*b*) Wood, other than pine or poplar, cut on the Crown lands of the Province of New Brunswick under authority of licenses or permits issued on or after October 1, 1911, whether such licenses shall have been issued for the first time or in renewal."

The Secretary of State has been requested to bring these modified instructions to the attention of the consular officers concerned for their information in connection with the specific verification of the exporter's declaration of origin, which they are required to make on invoices.

JAMES F. CURTIS, *Assistant Secretary.*

(T. D. 32117.)

Wood pulp—Printing paper.

Instructions in T. D. 31772 relative to wood pulp and printing paper produced from wood cut on the Crown lands in the Province of Ontario, extended to include such products of wood cut on the Indian lands in the same Province.

TREASURY DEPARTMENT, *December 27, 1911.*

To collectors of customs and others concerned:

The department is in receipt, through the Secretary of State, of a copy of the order in council of the Government of the Dominion of Canada, dated April 19, 1901, which in effect prohibits the exportation, for use in the manufacture of wood pulp, of pine, spruce, or other soft woods cut on Indian lands or Indian reserves in the Province of Ontario.

The instructions contained in T. D. 31772 of July 26, 1911, relative to wood pulp and printing paper produced from wood cut on the Crown lands in the Province of Ontario are, therefore, hereby extended to include such products of wood cut on Indian lands or Indian reserves in that Province.

The Secretary of State has this day been requested to instruct the American consular officers concerned to certify on invoices the origin of the wood from which the products exported were manufactured.

This decision will take effect 30 days after date, as provided in T. D. 28627 of December 18, 1907.

Respectfully,

J. F. CURTIS, *Assistant Secretary.*

LEASES GRANTED BY SECRETARY OF WAR.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

LIST OF LEASES OF GOVERNMENT PROPERTY MADE BY THE SECRETARY OF WAR DURING THE CALENDAR YEAR 1911.

JANUARY 12, 1912.—Referred to the Committee on Public Buildings and Grounds and ordered to be printed.

WAR DEPARTMENT,
Washington, January 11, 1912.

SIR: I have the honor to transmit herewith a list of leases granted by the Secretary of War during the calendar year 1911, under authority of the act of Congress approved July 28, 1892 (27 Stat. L., 321), which provides that "such leases shall be reported annually to Congress."

Very respectfully,

H. L. STIMSON,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE JUDGE ADVOCATE GENERAL,
Washington, January 10, 1912.

The SECRETARY OF WAR.

SIR: I have the honor to transmit a "list of leases granted by the Secretary of War during the calendar year 1911, under authority of the act of Congress approved July 28, 1892" (27 Stat. L., 321), together with the draft of a letter for transmitting the same to the Speaker of the House of Representatives—said act providing that "such leases shall be reported annually to Congress."

Very respectfully,

E. H. CROWDER,
Judge Advocate General.

List of leases by the Secretary of War during the calendar year 1911, under authority of the act of Congress approved July 28, 1892.

1. Mrs. George Jackle, Argyle, Wash. Five years from January 19, 1911. United States military reservation on Sand Island, Wash. Consideration, $1 per annum.
2. James H. Jones. Five years from February 1, 1911. Part of Fort Barrancas, Fla. Consideration, $1 per annum.
3. Fredolph R. Olson. One year from March 15, 1911. Right of way on the Illinois and Mississippi Canal, Bureau County, Ill. Consideration, $15 per annum.
4. W. E. Sapp. Five years from April 1, 1911. Tract of land on the Illinois and Mississippi Canal, Bureau County, Ill. Consideration, $5 per annum.
5. John Towers, president Rock Island Fishing & Hunting Club, Alabama. Five years from April 15, 1911. Rock Island, located in Coosa River, St. Clair County, Ala. Consideration, $31 per annum.
6. H. E. Hayward, St. Louis, Mo. Five years from May 1, 1911. Island known as Maple Island in the Mississippi River, below Alton, Ill. Consideration, $5 per annum.
7. Columbia River Packers' Association, Astoria, Oreg. Three years from May 1, 1911. Sites 1, 2, and 3, Sand Island, Oreg. Consideration, $12,509 per annum.
8. Alex Muller, Astoria, Oreg. Three years from May 1, 1911. Site No. 5, Sand Island, Oreg. Consideration, $86 per annum.
9. Booth Fisheries Co., Astoria, Oreg. Three years from May 1, 1911. Site No. 4, Sand Island, Oreg. Consideration, $210 per annum.
10. Charles F. Johnson, Nahant, Mass. Four years from May 1, 1911. Part of the United States military reservation at Nahant, Mass. Consideration, $84.50 per annum.

    NOTE.—This lease revokes the former lease for five years from May 1, 1910, to same party.
11. Pittsburg Junction Railroad Co. Five years from June 1, 1911. Land in twelfth ward, Pittsburgh, Pa., at Herr Island Lock, for railroad purposes. Consideration, $100 per annum.
12. The Postal Telegraph-Cable Co. Five years from June 1, 1911. To occupy that portion of Fort Hancock, N. J., now covered by its building and to maintain existing wires, etc. Consideration, $300 per annum.
13. The Western Union Telegraph Co. Five years from June 1, 1911. To occupy that portion of Fort Hancock, N. J., now covered by its building and to maintain existing wires, etc. Consideration, $300 per annum.
14. Arthur Bergh, Wyanet, Ill. Five years from July 1, 1911. Right of way on the Illinois & Mississippi Canal, Bureau County, Ill. Consideration, $5 per annum.
15. S. T. Marler, Destin, Fla. Five years from July 1, 1911. Lot No. 3*a* on United States Military Reservation of Moreno Point, Fla. Consideration, $5 per annum.
16. The Baltimore & Ohio Railroad Co. Five years from December 1, 1909. Parcel of land at Lock No. 2, Monongahela River, Pa. Consideration, $75 per annum.
17. T. R. Osmond, St. Augustine, Fla. Five years from September 1, 1911. Frame house and premises in the southwest corner of Fort Marion, Fla. Consideration, work to be performed.
18. Charleston-Dunbar Traction Co. One year, from September 1, 1911. Right of way 12 feet wide on United States land at Lock No. 6, Kanawha River, W. Va. Consideration, $150 per annum.
19. George W. Mikesell. Five years from July 1, 1908. A tract of land within right of way of the Illinois & Mississippi Canal, near Rock Falls, Ill. Consideration, $10 per annum. Revoked by the Secretary of War on June 30, 1911.
20. Mary Jane Frazier. Five years from January 15, 1907. Part of the United States Military Reservation at Fort Barrancas, Fla. Consideration: $1 per annum. Revoked by the Secretary of War, to take effect February 1, 1911.
21. J. H. Nunnelee, Montgomery, Ala. Five years from December 1, 1908. United States Military Reservation of Perdido Bay, Ala. Consideration: $5 per annum. Revoked by department February 15, 1911, upon request of lessee.
22. Monte L. Pickens, Panama City, Fla. Five years from May 1, 1911. Part of the United States Military Reservation of St. Andrews Bay, Fla. Consideration: $30 per annum. Revoked by the Secretary of War September 16, 1911.
23. Lease, five years from August 24, 1908, to Mr. J. C. Peterson, of Pensacola, Fla., of a part of the United States Military Reservation on Santa Rosa Island (Fort Pickens Military Reservation). Consideration: $12 per annum. Revoked by the Secretary of War December 20, 1910. Renewed and revocation recalled July —, 1911.

62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 449.

SALE OF COTTON TO CONFEDERATE STATES GOVERNMENT.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

RELATING TO

PERSONS WHO SOLD COTTON TO THE CONFEDERATE STATES GOVERNMENT.

JANUARY 13, 1912.—Referred to the Committee on Expenditures in the Treasury Department and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, January 6, 1912.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: My attention has been called to House resolution 333, introduced by Mr. Jacoway December 9, 1911, and referred to the Committee on War Claims, directing the Secretary of the Treasury to prepare from records in his possession, either those of the United States Government or those of the late Confederate States, a list of persons shown to have sold cotton to the Confederate States Government, or to have entered into any agreement to sell cotton to said Government, and also to House resolution 349, introduced by Mr. Candler December 19, 1911, and referred to the Committee on Expenditures in the Treasury Department, which calls for the preparation and transmission of all the information specified in House resolution 333, and in addition requires information whether the cotton sold to the Confederate Government was subsequently taken possession of by officers of the United States Government; and if so, the disposition of the cotton, the gross and net proceeds realized from any sales thereof, and whether or not the proceeds now remain in the United States Treasury, and also to show the cotton for which claims have been filed in the Treasury Department, and the names of persons by whom such claims were filed.

The resolutions have a direct bearing upon the cotton claims which, under section 162 of the judicial code approved March 3, 1911 (36 Stat., 1139–1140), were referred to the Court of Claims for adjudication, and as this department is now actively employed in the work of collecting and arranging information for the use of the court in the trial of pending cases, it would seem that neither the interests of the claimants nor of the Government would be subserved by diverting the limited available force of the department from the completion of the information desired by the court, to engage in the preparation of the data specified in the resolutions.

The additional information required by House resolution 349 intended to show the disposition of the cotton, the proceeds realized therefrom and now remaining in the Treasury with a report of all the claims for such cotton heretofore filed, would necessitate a further and separate examination of all Civil War records of the department pertaining to cotton transactions, and of all cotton claims heretofore filed in either the Treasury Department or the courts, to determine the claims in which the proceeds of the cotton were refunded by the Treasury Department under general and special laws authorizing such refunds, or paid to claimants upon judgments of the Court of Claims and other courts.

The magnitude of the task suggested by the call for the information specified in the resolutions may be inferred from the fact that the records possessed by this department are very voluminous, and the task of preparing the proposed list of sales alone probably would require several months' time for its completion, as an exhaustive examination of all related records would be necessary to comply with that part of the resolutions directing that the statement shall show whether the sale was a completed one or only an agreement to sell and whether the price agreed upon had actually been paid by the Confederate Government.

In explanation of this phase of the claims, it may be stated that when the sales were consummated the Confederate Government, not having storage facilities for the concentration of the cotton at depots, caused the sellers to contract to store and care for the cotton on their plantations and to deliver it at designated points on the order of the Confederate treasury department, and under such agreements the former owners have been regarded as bailees of the cotton.

Much cotton of this character was thus in possession of the former owners at the time of the surrender of the military forces of the Confederacy and was subsequently collected by agents of the United States and sold, and the proceeds placed in the Treasury.

As payments for cotton purchased by the Confederate Government were largely made in Confederate bonds, rendered valueless as a result of the war, those persons who sold their cotton to the Confederate Government have contended that the sale was incomplete in that they never parted with the possession of the cotton, and, moreover, that as the Confederate bonds received in payment were of no value, the sale was void as being without consideration. As most of these sales occurred in the years from 1861 to 1864 it may be observed that the department has no information of how the bonds were disposed of by those who received them, but it is probable that many of them were sold while such securities still retained a marketable value.

Congress by the act of March 3, 1911, supra, has committed the adjudication of the cotton claims to the Court of Claims, and the fullest information as to sales of cotton by individuals to the Confederate Government will be furnished to the Court of Claims from the records possessed by the department so as to present the facts pertaining to each individual case, and as section 164 of said act of March 3, 1911, authorizes the court to call upon this department for any information or papers necessary in the prosecution of its business it would seem that the law sending the claims to the court for adjudication to be there proceded in as in other cases contemplated that the procuring of all necessary evidence from departmental records should be conducted in the manner indicated in the law and under the rules of the court.

Evidence that the cotton for which a claim is filed was actually sold to the Confederate Government is matter of defense to be offered in court for the protection of the interests of the United States, as required by section 185 of the judicial code, and, in my opinion, compliance with the resolutions, in advance of the filing of such claims in the Court of Claims, by disclosing the details of the Government's defense against the claims, would be injurious to the public interests.

The many controverted questions of fact and law involved in the sales of cotton to the Confederate Government will be determined by the Court of Claims in the exercise of the full jurisdiction given to the court to adjudge said cotton claims, and full information from the records of the department relating to such sales will be furnished to the court in response to its calls made under said section 164 of the act of March 3, 1911.

As the provisions of the law for the submission of evidence from the records of this department direct to the Court of Claims appear to meet every requirement for the adjudication of the cotton claims, it is believed that the specific data, when furnished as called for and desired by the court, will supply all necessary information as to sales of cotton to the Confederate Government and of all other facts of record pertaining to the claims in such form and detail as to present the complete facts of each individual case.

Respectfully,

Franklin MacVeagh,
Secretary.

62d Congress, 2d Session
HOUSE OF REPRESENTATIVES
Document No. 451

TRUCKEE-CARSON-LAKE TAHOE PROJECT

LETTER FROM THE SECRETARY OF AGRICULTURE

TRANSMITTING, IN RESPONSE TO HOUSE RESOLUTION NO. 270

INFORMATION RELATING TO TRUCKEE-CARSON-LAKE TAHOE PROJECT

January 13, 1912.—Referred to the Committee on the Public Lands and ordered to be printed, with illustrations

WASHINGTON
1912

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

LETTER OF TRANSMITTAL.

Department of Agriculture,
Office of the Secretary,
Washington, January 12, 1912.

Hon. South Trimble,
Clerk of the House of Representatives.

Sir: In compliance with House resolution No. 270, I have the honor to transmit herewith all the papers in the files of this department, indexed and digested, relative to the Truckee-Carson-Lake Tahoe project.

Very respectfully,

James Wilson,
Secretary.

TRUCKEE-CARSON-LAKE TAHOE PROJECT.

Report on the Possible Water-Power Development of the Watershed of the Truckee River Above Clarks Station, Nev.

By O. C. Merrill.

[Sept. 20, 1909.]

United States Department of Agriculture,
Forest Service, District 5,
San Francisco, Cal., September 20, 1909.

The Forester,
Washington, D. C.

Sir: I beg leave to submit herewith, "A Report on the Possible Water-Power Development of the Watershed of the Truckee River Above Clarks Station, Nev."

This report has aimed to present in considerable detail such information as has been secured concerning the several reservoir sites within the Truckee River watershed that might be developed for power purposes under the terms of the Truckee River General Electric Co.—Reclamation Service agreement of May, 1909. While this report can not go into the details of cost estimates, upon which alone final conclusions could be reached as to the feasibility of the construction of any particular reservoir described herein, it is believed that all the sites named are sufficiently favorable to warrant their inclusion in a tentative scheme of general development.

In the several projects for power plants also outlined herein, it has been the intention to present such a series of developments as, from the data available, would seem not only feasible of construction, but also capable of making a complete utilization of the water-power resources of the entire watershed, regardless of whether such developments would be located within or without the Tahoe National Forest and regardless of any conflict between such developments and the irrigation or other uses dependent upon the water resources of the same drainage basin. As stated above, in relation to reservoir sites, this report has not gone into estimates of costs of construction, such as would be necessary before arriving at any final conclusion regarding the feasibility of any particular development outlined herein. As far, however, as judgment can be based on the data now at hand all these projects seem feasible.

A brief outline has been given of the origin of the ownership of and the right to operate the dam and gates at the outlet of Lake Tahoe, and the several changes in title which have led up to the present claims of the Truckee River General Electric Co., upon which are based their recent negotiations with the United States Reclamation Service.

Brief discussions have also been given of the probable effect of the execution of this agreement upon the amount of water available in the future for the use of the Truckee-Carson project and what effect the rights granted under this agreement would have upon the creation of a water-power monopoly in eastern California and Nevada.

Special attention is called to the general summary at the end of this report, where the main features considered are briefly outlined.

Very respectfully,

O. C. Merrill, *Engineer.*

INTRODUCTION.

Instructions.—In pursuance of the request contained in the Associate Forester's letter, "L—Policy—Power—6-28-09," a general examination was made of the watershed and reservoir sites on Donner and Prosser Creeks and the Little Truckee River, from July 20-24, inclusive, 1909, and of the Washoe Valley, Nev., on July 30 and 31, 1909, and in accordance with the Associate Forester's telegram of August 13, 1909, a second and more detailed examination of possible power locations on the Truckee River watershed was made, from August 19-21, inclusive, 1909.

Nature of the investigations.—The short period of time devoted to the several examinations and the methods necessarily employed permit of only approximate results. With two exceptions, only such reservoir sites were examined as had been previously examined and surveyed by the engineers of the United States Geological Survey. These, however, comprise all, or a majority of the sites, that could be economically developed. When surveys did not show the heads available for power purposes, these were determined by carefully checked aneroid-barometer readings.

Purpose of the investigations.—The investigations, both field and office, have aimed to determine, as closely as the data permitted, the probable location and feasibility of construction of any reservoirs that might be built in the event of the execution of the proposed contract between the Truckee River General Electric Co. and the Reclamation Service; the location and extent of the national forest lands that would be involved; the amount of power that could be developed on the entire watershed under consideration; the opportunity for the monopoly of this power presented by the terms of the proposed agreement; the relation between the Truckee River General Electric Co. and other companies operating or proposing to operate in this or adjacent districts; and, in a general way, how the proposed contract would affect the quantity of water available for the Truckee-Carson Reclamation project, and what relation it would bear to the general policy of the Forest Service toward commercial power developments.

Data available and utilized.—Rainfall records have been kept at several stations within the basins of the Truckee River, mainly by agents and operatives of the Southern Pacific Railroad and the Lake Tahoe Railroad & Transportation Co. These records date back in several instances to 1870 (see Table No. 2, p. 14), and up to and including 1901 may be found in Water Supply Paper No. 68 of the United States Geological Survey, and since that date in report of the United States Weather Bureau.

Records of run-off have been regularly kept by the United States Geological Survey at Tahoe, Cal., State Line and Vista, Nev., since 1900, and for a shorter period of time on Donner and Prosser Creeks and on the Little Truckee River, with occasional records and measurements on other streams within the Truckee River watershed. These records are published in Water Supply Papers, Nos. 68, 81, 85, 133, 176, and 212.

A general study of water storage in the Truckee Basin with description of the available reservoir sites, with records of rainfall and run-off, and with estimates of the storage available for irrigation, based upon data up to and including 1901, may be found in Water Supply Paper No. 68, 1902, of the United States Geological Survey.

Information relating to the early history of the operations on the Truckee River, the several changes in ownership that have led up to the present combination of all the power plants, and to the negotiations with the Reclamation Service culminating in the form of agreement of May, 1909, have been secured mainly through the courtesy of Mr. Thomas, of the firm of Thomas, Gerstle, Frick & Beedy, San Francisco.

Location of area affected.—The proposed contract between the Truckee River General Electric Co. and the Reclamation Service concerns all the watershed of the Truckee River and its tributaries above Clarks Station, Nev., including the watershed of Lake Tahoe, the Washoe and Steamboat Valleys. The larger part of this area lies in the State of California, comprising portions of Alpine, Eldorado, Placer, Nevada and Sierra Counties. The remainder lies in Douglas, Ormsby, and Washoe Counties, Nev. The entire area affected is about 1,520 square miles, of which about 950 square miles are in California and the remaining 570 square miles in Nevada.

As appears on the status map accompanying this report, a relatively small portion of the entire area is national forest land. Every alternate section over practically the whole watershed is railroad land, while many of the remaining sections have been patented. In consequence the amount of national forest land that would be actually occupied in event of the complete development of this watershed is small. The extent of this area will be shown in detail in the succeeding pages.

ORIGIN OF THE RIGHTS OF THE TRUCKEE RIVER GENERAL ELECTRIC COMPANY.

The act of 1870.—In the year 1870 the Donner Lumber & Boom Co., composed of the promoters of the Union Pacific Railroad, Hopkins, Stanford, and others, applied to the California Legislature for a franchise permitting them to improve the channel of the Truckee River from the lake outlet to the town of Truckee by clearing the channel of obstructions and by erecting a dam at the lake outlet and others at such points as they might desire, between the lake outlet and the town of Truckee, for the purpose of rendering the channel suitable for the transportation of wood, logs, and lumber. Application was also made for the right to levy tolls on all other persons or corporations who might wish to use the improved channel for similar purposes. The act granting these rights was passed and approved on April 4, 1870, and was as follows:

CHAPTER DXIII.

An act to authorize the Donner Lumber & Boom Co., their associates and assigns, to improve the channel of the Truckee River from its source to the town of Truckee, and to erect flood gates therein and to collect tolls.

The people of the State of California, represented in senate and assembly, do enact as follows:

SEC. 1. The Donner Lumber & Boom Co. is hereby authorized and empowered to improve, at its own expense, the channel of the Truckee River from its source to the eastern boundary of the State of California by removing the rocks, bowlders, gravel, and timbers therefrom and by erecting flood gates at the outlet of the lake and along the channel of said river, not more than 5 feet in height, so as to render it practicable to float saw logs, lumber, and wood down said channel to said town of Truckee.

SEC. 2. Whenever the said Donner Lumber & Boom Co. shall have expended, in the improvements provided for in the first section of this act, the sum of $25,000, then, from that time forward, for the term of 20 years, it shall be and is hereby authorized and empowered to ask for and collect, demand, and receive, as toll and compensation for the use of said improvements of said river, from each and every person and corporation, and from all persons floating saw logs or timber intended to be sawed into lumber, or timber to be used for building or construction purposes, or lumber or wood, down the channel of said river between the lake and said town of Truckee, a sum not exceeding 50 cents for each 1,000 feet of lumber said timber or saw logs will make and not to exceed 50 cents for each 1,000 feet of saw timber and 25 cents for each cord of wood containing 128 cubic feet, said toll or compensation to be paid before said lumber, logs, timber, or wood reaches said town of Truckee: *Provided*, That this act shall not be so construed as to give the right of collecting any tolls or compensation on any lumber or material floated down said stream by any of the same from the State of California into the State of Nevada, nor in any manner to affect the commerce between said States by way of said stream.

SEC. 3. If the toll and compensation provided for in the second section of this act is not paid before the said timber, logs, lumber, or wood reaches the said town of Truckee, said Donner Lumber & Boom Co., its officers, agents, and employees, or any person acting under their direction, may seize and take into their or his possession the timber, lumber, logs, or wood so floated down the chanel of said river on which the said toll or compensation has not been paid: and upon giving two weeks' notice, in the manner in which constables are required to give notice of sale of personal property in execution, he or they may sell at public auction, to the highest bidder for cash, sufficient of the same to pay the toll or compensation due: *Provided*, That at the time of making the sale at auction the person making the sale shall announce to the bystanders the amount of toll due, and shall sell the same in parcels of not more than 10,000 feet of logs, timber, or lumber, or not more than 10 cords of wood, until the amount of toll or compensation has been received.

SEC. 4. For the purpose of ascertaining when the said company to which this franchise is granted shall have expended said sum of $25,000 in the improvement of said river, said company may, at any regular meeting of the board of supervisors of Placer County, make proof before said board as to the amount then expended in good faith; an order shall be entered on their minutes that said sum has been expended on their improvements; and from that time forward said toll or compensation may be collected and received.

SEC. 5. The dam and floodgates herein authorized to be constructed shall each, when constructed, contain a fishway or fish ladder, so that fish can readily pass upstream for the purpose of depositing their spawn. Said fishways or fish ladders shall be kept by the proprietors of this franchise in constant repair; and should, from any cause, the fishway or ladder be out of repair, so that fish can not pass up the stream, then during all the period that said fishway or fish ladder shall be out of repair said company shall not be authorised to collect tolls for any lumber or timber that may be floated down the river. Should the fishways or fish ladders be permitted to remain for three months in a condition so that fish can not pass upstream, then, upon complaint of any citizen and proof of the fact to the board of supervisors of Placer County, said board of supervisors shall declare the franchise forfeited to the State, whereupon the right of said company to collect tolls shall cease: *Provided*, That this act shall not be so construed as to prevent the appropriation of the water of Lake Bigler or Truckee River for manufacturing, irrigating, domestic, or mining purposes in such manner as not to decrease the supply of water in said river below the quantity necessary to carry into effect the provisions of this act, nor to interfere with the use of the channel of said river for the purpose herein granted to the company named in this act.

SEC. 6. This act shall take effect from and after its passage.

Approved, April 4, 1870.

Under the provisions of this act a timber crib dam was constructed at the outlet of Lake Tahoe, with its spillway at such an elevation as to raise the lake level 6 feet—not 5 feet, as stipulated in the act—while several other smaller dams were constructed along the river between the lake and the town of Truckee.

About five years after the passage of this act, namely, on November 6, 1875, as the minutes of the board of supervisors of Placer County show (see Appendix I), the Donner Lumber & Boom Co. made proof to the above board of the expenditure of the $25,000 stipulated in the act and presumably from that date forward began to exercise the right of collecting tolls. The 20-year limit for exercising this right would therefore have expired on November 6, 1895. No provision seems to have been made in the act, however, for the termination of the right to maintain the dam and to use the channel for the purpose of transporting logs and timber, except for proved violation of the requirements to maintain fish ladders in the several dams. Whether the terms of the act were followed any more closely in this regard than in that limiting the height of the dams is not known, or whether any complaint during the time in which the franchise was enjoyed was ever made by any citizen, as provided for in section 5.

EXERCISE OF RIGHT BY PRESCRIPTION.

How long the Donner Lumber & Boom Co. operated the floodgates for the purposes granted in the act is also uncertain. Mr. Taylor, in his report in 1902 (Water Supply Paper No. 68), states that the dam at the outlet of the lake had not been used for floating logs for five years previous to that date. The outlet dam has, however, been used continually for regulating the flow from Lake Tahoe to serve the interests of the power plants that have been constructed along the river between Truckee and Reno.

How good a title to the use of this outlet dam for power purposes the Donner Lumber & Boom Co. acquired under the above act and under the subsequent apparently undisputed and uncontested possession and operation of the floodgates and whether that right has been fortified by appropriation under general State law is also uncertain. The records of Placer and Eldorado Counties are being searched and any information bearing upon this question will be submitted later. It is the opinion of a prominent attorney, who has for several years been concerned in the transfer of these properties, that the title passed by the Donner Lumber & Boom Co. to its successors is, to say the least, not unassailable.

Having long discontinued the use of the dam for the purposes originally intended and getting no returns to offset the expense of operation, the Donner Lumber & Boom Co., in the persons of the heirs of the original incorporators, in the year 1903 (dates are approximate only) issued notices to the owners of power plants along the river containing demands for rental in consideration of the use of the water stored and controlled by the company's dam and gates. These notices were at first ignored, but when supported by the threat to open the gates and allow all the stored waters to escape, the Fleischackers, who owned two of the power plants below Truckee, made overtures for the purchase of so much of the land at the outlet of the lake as would serve to include the dam and gates, together with whatever of title to and right to operate these gates the Donner Lumber & Boom Co. had acquired. The 54 acres described in the Truckee River General Electric Co.-Reclamation Service agreement was accordingly sold to the Fleischackers for $45,000, with a clause inserted in the deed granting in addition the littoral rights along that strip of land still retained by the Donner Lumber & Boom Co., and separating the 54-acre tract from the Tahoe Tavern property, together with the sole privilege of cutting a channel through this piece of property for the purpose of carrying out thereby the water of Lake Tahoe.

NEGOTIATIONS WITH UNITED STATES RECLAMATION SERVICE.

Not long thereafter the United States Reclamation Service, through Messrs. Bien, Savage, and Taylor, sought to purchase the tract still owned by the Donner Lumber & Boom Co., and, apparently not believing that the deeding of the littoral rights along this property to the Fleischackers could hold, bought this property for $7,500 from the Donner Lumber & Boom Co., with the intention of immediately constructing through this land a second and artificial outlet from Lake Tahoe. The contract for the work was let and the men and machinery were on the ground, when all operations were stopped by injunctions levied by Messrs. Tevis and Baldwin, and the contract was canceled.

Negotiations appear to have been carried on with the Fleischacker interests looking to some form of equitable and mutually satisfactory agreement by which the Reclamation Service should purchase the 54-acre tract at the lake outlet and should secure control and operation of the dam and gates in return for guaranteeing to the power company a certain minimum flow of water at their plants. Deeds were drawn up providing for such arrangements, but never came to the point of final execution. (See pages 130–141.)

CONSOLIDATION BY THE HAMMON INTERESTS.

In the meantime the so-called Hammon interests, including, it is stated, a syndicate of English capitalists and New York and Boston bankers, together with the engineering firm of Stone & Webster, of Boston, and through F. G. Baum, of San Francisco, working in cooperation with the Nevada-California Power Co., acquired control of all the power plants operating on the Truckee River. Under the new management the rights demanded by the company in return for allowing the Reclamation Service to control and operate the gates at the lake outlet in such manner as to render available the flood waters by them appropriated acquired new proportions and included in the form of agreement of March, 1909 (see pages 130–141), in addition to the stipulations of the earlier contract, the right to take the waters of Lake Tahoe through an artificial outlet, "the second diversion," at a place and at a time subject only to the company's option; the right to locate reservoirs, power houses, roads, conduits, and transmission lines on any public land within the entire watershed of Lake Tahoe and the Truckee River, subject only to the condition that such selections must be made within a period of five years and construction must be completed within a further period of five years, and the right to hold and use these sites in perpetuity, subject to no charge and to no control.

PRESENT POWER DEVELOPMENTS.

FLORISTON PULP & PAPER CO., AT FLORISTON.

Water Supply Paper No. 68 gives the following description of this plant:

> The Floriston Pulp & Paper Co. * * * is engaged in the manufacture of paper from wood pulp. For the operation of the plant the water is diverted from the river by means of a timber dam and is conveyed to the mill through a wooden-stave pipe 5 feet in interior diameter and 2,000 feet long. Six turbines, varying in capacity from 100 to 1,000 horsepower and aggregating 2,700 horsepower, are employed to run the machinery, the water being delivered to each wheel under a head of 51 feet. It is estimated by the owners of the plant that 1,500 horsepower is required to run it to its full capacity, to generate which about 320 cubic feet per second of water is needed. The flow of the river during the fall and winter, however, is frequently less than that amount, and, as a consequence, the company is now preparing to install steam power for supplementary uses. (Water Supply Paper No. 68, 1902, p. 70.)

The "indenture," dated October 15, 1908 (see pages 130–141), states the "diversion capacity" of the plant to be 400 cubic feet per second and the "head" as 56 feet, which, with 80 per cent efficiency of the water wheels, would give 2,040 horsepower. Since this is, however, a low-head plant and probably is not equipped with up-to-date machinery, it is likely that the efficiency is not above 60 per cent, which would give a maximum output of but little over 1,500 horsepower.

TRUCKEE RIVER GENERAL ELECTRIC CO. AT FARAD.

> Less than 2 miles below Floriston is the power plant of the Truckee River General Electric Co., which is engaged in the development of power for transmission electrically to Virginia, for use in mining operations. The water employed for this purpose is taken from the river immediately below the Floriston Paper Mills, and is conveyed by means of a wooden flume, 8,500 feet in length, to the power house, where it is delivered to the wheels under a head of 85.6 feet. The inside dimensions of the flume are, width 10 feet and depth 7 feet. Its carrying capacity when filled to a depth of 6 feet is estimated at 300 second-feet. (Water Supply Paper No. 68, 1902, p. 73.)

The "indenture" of October 15, 1908, gives the "diversion capacity" as 400 cubic feet per second and the "head" as 85 feet. The "diversion capacity" there given is largely in excess of the estimated capacity of the flume as given above. However, if the figures given in the " indenture " be accepted, the power generated would be, at 80 per cent efficiency, 3,090 horsepower, and at 60 per cent efficiency, 2,320 horsepower. Probably, as in the case of the Floriston Pulp & Paper Co., 60 per cent efficiency more nearly represents the real capacity of the plant. This is corroborated by a statement in the Engineering Record of July 17, 1909, saying that the capacity of the plant is 1,700 kilowatts, which is equivalent to 2,280 horsepower.

TRUCKEE RIVER GENERAL ELECTRIC CO. AT FLEISCH.

This plant is situated at Fleisch, about 8 miles below Farad. In the above-mentioned " indenture " its " diversion capacity " is said to be 300 cubic feet per second and the " head " 26 feet, which at 80 per cent efficiency of the wheels would make a power output of 3,440 horsepower. The installed capacity is stated in the Engineering Record of July 17, 1909, page 73, to be 2,300 kilowatts, which is equivalent to 3,080 horsepower.

WASHOE POWER & DEVELOPMENT CO. AT MOGUL.

The power house is situated on the Truckee River a short distance below the power house at Fleisch. The " indenture " gives the " diversion capacity " as 320 cubic feet per second and the " head " at 88 feet, which at 80 per cent efficiency of the wheel would make a power output of 2,400 horsepower, and at 60 per cent efficiency, 1,800 horsepower.

RENO POWER LIGHT & WATER CO. AT RENO.

> About 1½ miles above Reno the Reno Electric Light & Power Co. diverts water from the river to supply power for lighting the town. For this purpose it is estimated by the electrician in charge that 200 horsepower is now employed, and as the net head on the water wheel is about 38 feet, approximately 60 cubic feet per second are necessary. The capacity of the canal and flume from the river is probably double this, however. (Water Supply Paper No. 68, 1902, p. 73.)

The diversion capacity, as stated in the " indenture," is 250 cubic feet per second, or double that stated in the above report. The " head " is given as 41 feet. New equipment has been recently installed, consisting of a unit of 700-kilowatt capacity, equivalent to 840 horsepower, making the efficiency of the plant as reconstructed about 80 per cent.

OTHER POWER DEVELOPMENTS ON THE TRUCKEE RIVER.

The above-named power plants are all at present under the control of the Truckee River General Electric Co., which furnishes power for lighting in Truckee, Reno, Virginia, Carson, and several other towns, supplies current for the street railway system in Reno, and transmits power at 20,000 volts for use in the mines at Virginia City. In addition to the preceding, there are several power plants or factories of small capacity on the river; the Truckee Lumber Co.'s sawmill and sash factories at Truckee, the Verdi Mill Co.'s factories at Verdi, the Riverside Flour Mill and the Reno Reduction Works at Reno, and the Wadsworth Light & Power Co. at Wadsworth, with an aggregate capacity amounting to probably 900 horsepower.

Table No. 12, page 58, gives a summary of the "diversion capacity," "head," and "power capacity" of the several plants outlined above.

DESCRIPTION OF DRAINAGE BASIN.

Physical characteristics.—About 15 miles south of the southern limit of Lake Tahoe the Sierra Nevada Mountains divide into two branches, the main range forming the western boundary of the Truckee River drainage basin; the branch range and its extension, the Washoe Mountains, forming the southern and eastern boundary. A range of less elevation extending from Webber Peak on the main divide and meeting the Washoe Mountains near Vista, Nev., forms the northern boundary of that portion of the watershed under present consideration. With the exception of the Washoe Valley, the so-called Truckee Meadows and certain other areas of small extent, the entire watershed consists of mountain slopes, apparently formerly well timbered, though now in a large measure cut over. The cut-over areas are, however, well covered with brush or "second growth," and therefore capable of partially conserving the run-off and preventing sudden floods and consequent destruction of the slopes.

Ownership.—A map is presented with this report showing the status of all the lands likely to be affected by water-power developments on this watershed.

Area and elevations.—As stated above, the entire area concerned in this report covers about 1,520 square miles. Of this area, 520 square miles form the watershed of Lake Tahoe, the other 1,000 square miles comprise the remaining watershed of the Truckee above Vista, Nev., and include the main tributaries, Donner Creek, Prosser Creek, and the Little Truckee River.

For the purpose of making studies of rainfall and run-off, the areas tributary to several of the possible reservoir sites have been measured, as well as the area on each watershed lying between certain limits of elevation. Results of these measurements are shown in Table No. 1, page 14.

PRECIPITATION.

Precipitation records have been kept at five stations within the Truckee River watershed since 1870, and for shorter periods at several other stations. These records have been included in Table No. 2, page 14. These stations vary in elevation from Wadsworth, Nev., elevation 4,077 feet, to Summit, Cal., elevation 7,017 feet, a range of 2,940 feet. An examination of the precipitation at the several stations, arranged according to elevation, as in Table No. 3, page 15, shows a fairly uniform increase in precipitation with elevation. Other factors than elevation necessarily modify the rainfall at the stations shown, particularly the interposition of that branch of the Sierra Nevada Range which intersects the watershed between the Tahoe and Washoe Basins. Also, the records at several of these stations are of too short duration to be reliable. Table No. 3 shows, however, a close relation between the depth of precipitation and the elevation of the station.

TABLE NO. 1.—*Areas of watersheds tributary to certain possible reservoir sites, with areas between certain elevations, in square miles.*

	Webber Lake.	Little Truckee No. 1.	Independence Creek.[1]	Twin and Euers Valleys.	Donner Creek.[2]
Above 8,000 feet	0.0	3.9	2.9	3.5	0.6
8,000–7,000 feet	8.9	6.6	9.9	9.8	8.6
Below 7,000 feet	[3] 5.1	[4] 8.8	[4] 2.9	7.7	[5] 21.5
Below 6,000 feet	0.0	0.0	0.0	0.0	1.8
Total area	14.0	19.3	15.7	21.0	30.7
Percentage of area.					
Above 8,000 feet	0	20	18	17	2
Above 7,000 feet	64	54	82	64	30
Below 7,000 feet	36	46	18	36	70
Below 6,000 feet	0	0	0	0	6

[1] Includes Lower Independence Creek.
[2] Includes Cold and Trout Creeks.
[3] None below 6,700 feet elevation.
[4] None below 6,500 feet elevation.
[5] Includes the 1.8 square miles which is below 6,000 feet elevation.

TABLE NO. 2.—*Annual rainfall, in inches, at 10 stations on eastern slope of Sierra Nevada in and adjacent to basin of Truckee River.*[1]

Year.	Station.								
	Wadsworth.	Reno.	Verdi.	Boca.	Truckee.	Summit.	Lewers Ranch.	Genoa.	Carson.
Elevation	4,077	4,497	4,895	5,541	5,819	7,017	5,177	4,824	4,670
1870	2.30	....	....	13.46	23.28	34.29	....	....	....
1871	4.04	4.86	....	16.87	36.71	60.00	....	....	....
1872	.70	4.11	....	8.40	27.29	37.90	....	....	....
1873	1.84	2.75	....	11.65	26.16	40.95	....	....	....
1874	4.13	5.70	....	21.85	35.69	18.85	....	....	....
1875	3.96	6.06	....	10.66	27.50	33.86	....	....	17.73
1876	2.27	3.59	....	17.73	28.85	46.90	....	....	9.06
1877	4.27	5.68	....	8.89	16.13	26.73	....	....	....
1878	4.85	6.32	....	15.81	25.81	32.69	....	....	....
1879	3.88	4.02	....	21.08	27.86	73.67	....	....	....
1880	3.31	6.70	....	16.79	37.61	64.50	....	....	13.10
1881	5.01	5.89	....	2.42	21.28	30.95	....	....	10.33
1882	3.56	5.48	....	21.00	30.50	62.12	....	....	11.29
1883	2.82	3.95	....	11.30	16.80	23.57	....	....	6.95
1884	4.79	6.17	....	28.60	43.81	60.47	....	....	17.82
1885	3.59	2.95	....	8.38	14.91	25.41	....	....	11.32
1886	5.30	4.82	....	17.60	18.55	41.00	....	....	10.93
1887	6.70	5.78	....	20.39	25.95	49.97	....	....	8.54
1888	3.78	4.60	....	11.23	8.85	38.02	....	....	7.12
1889	5.19	6.43	17.87	38.40	19.16	51.42	....	22.80	12.44
1890	6.78	9.72	15.63	32.07	39.45	58.83	....	16.89	13.80
1891	6.22	10.45	....	28.10	26.85	26.03	29.00	22.61	18.30
1892	4.65	11.92	18.33	29.06	31.10	44.70	26.29	....	14.25
1893	....	4.74	....	27.62	32.54	....	22.66	15.78	11.42
1894	....	7.27	....	27.64	30.45	....	25.69	12.50	12.75
1895	4.51	5.53	20.97	16.47	23.39	....	20.36	10.45	10.91
1896	10.28	10.59	23.09	30.50	29.61	....	30.50	....	14.64
1897	7.25	8.00	13.13	26.02	27.33	....	25.61	....	13.63
1898	4.27	6.41	3.91	14.81	12.21	31.46	14.32	....	6.04
1899	5.32	8.50	18.06	32.47	33.86	73.80	26.35	....	9.73
1900	5.30	7.81	8.97	26.27	17.56	42.52	23.72	....	10.13
1901	....	....	....	10.67	26.43	49.60	....	....	....
1902	....	....	....	10.82	19.68	49.00	....	....	....
1903	....	....	....	18.63	27.69	40.50	....	....	....
1904	....	....	....	....	40.19	76.54	....	....	....
1905	....	....	....	....	17.67	43.85	....	....	....
1906	....	11.05	....	24.18	32.52	57.55	39.78	....	17.57
1907	....	....	....	29.74	42.27	66.48	....	....	....
1908	....	5.42	....	9.47	14.61	33.28	10.67	....	....
Mean	4.51	[2] 6.73	15.56	[2] 20.13	[2] 26.88	[2] 46.58	[2] 24.90	16.87	12.07

[1] Extended from table in W. S. Paper, No. 68, 1902, U. S. G. S.
[2] Normals for complete period of observation, from report U. S. Weather Bureau.

TABLE No. 3.—*Increase in precipitation with each 100 feet rise in elevation above Wadsworth, Nev., as base.*[1]

Station.	Length of record.	Elevation.	Elevation above Wadsworth.	Mean precipitation.[2]	Increase in precipitation over Wadsworth.	Constant increase for each 100 feet rise.
	Years.	*Feet.*	*Feet.*	*Inches.*	*Inches.*	*Inches.*
Wadsworth, Nev	29	4,077	....	4.51	....	....
Reno, Nev	38	4,497	420	6.73	2.22	0.53
Carson, Nev	24	4,670	593	12.07	7.56	1.27
Genoa, Nev	6	4,824	747	16.87	12.36	1.65
Verdi, Nev	9	4,895	818	15.56	11.05	1.35
Lewers Ranch, Nev	18	5,177	1,100	24.90	20.39	1.86
Boca, Cal	37	5,541	1,464	20.13	15.62	1.07
Truckee, Cal	39	5,819	1,742	26.88	22.37	1.28
Summit, Cal	34	7,017	2,940	46.58	42.07	1.43
Mean	....	....	....	....	....	1.30

[1] Adapted from corresponding table in W. S. Paper No. 68, 1902, U. S. G. S.
[2] From Table No. 2, page 14.

TABLE No. 4.—*Estimated mean annual precipitation of certain watershed areas in Truckee River drainage basin.*

[Based on Diagram No. 1 and Table No. 1.]

Watershed.	Area.	Estimated mean annual precipitation.	Percentage increase over Donner Creek.
	Square miles.	*Inches.*	
Independence Creek[1]	15.7	53.4	25.3
Webber Lake	14.0	50.4	18.3
Little Truckee No. 1[2]	19.3	50.3	18.1
Twin and Euers Valleys	21.0	49.8	16.9
Donner Creek[3]	30.7	42.6	....

[1] Includes lower Independence Creek.
[2] Not including Webber Lake watershed.
[3] Including Cold and Trout Creeks.

From Table No. 3, Diagram No. 1 has been prepared, showing graphically the relation of precipitation to elevation. On this diagram has been drawn an average curve of mean annual precipitation, with varying elevation, which has been extrapolated to 8,000 feet to indicate the probable precipitation at points of the watershed at an elevation above that of Summit, Cal.

On the basis of the mean curve of Diagram No. 1 and of Table No. 1, Table No. 4 has been prepared to show the probable average precipitation upon the several sections of the watershed tributary to certain possible reservoir sites. In determining the average precipitation from the curve all areas above 8,000 feet in elevation were assumed to have the precipitation as shown by the curve for 8,000 feet, and areas between two given elevations, the precipitation at the mean of the two elevations. The last column in Table No. 4 shows the precipitation upon the first four watersheds in excess of that upon the Donner Creek watershed.

RUN-OFF AND STREAM FLOW.

Data available and utilized.—Run-off records have been kept for a number of years at several stations on the watershed of the Truckee River. Those of longest duration are at Tahoe, the outlet of the lake at the California-Nevada State line, and at Vista, Nev. Records of shorter duration have been kept for Donner and Prosser Creeks and for the Little Truckee River, with occasional measurements of many other smaller streams on the watershed. These records are published in Water-Supply Papers Nos. 68, 81, 85, 133, 176, and 212.

Run-off tables.—Records of run-off at Tahoe do not represent the natural regimen of the stream at that point due to the regulation of the flow by the dam and gates at the outlet. Furthermore, it has been desired to study the run-off of the Truckee River, which would be available for power purposes at Floriston, Cal., if the water of Lake Tahoe watershed should be diverted as proposed in the pending contract between the Truckee River General Electric Co. and the United States Reclamation Service. Hence, Section I of Table No. 15 (appended to this report) shows the run-off of that portion of the

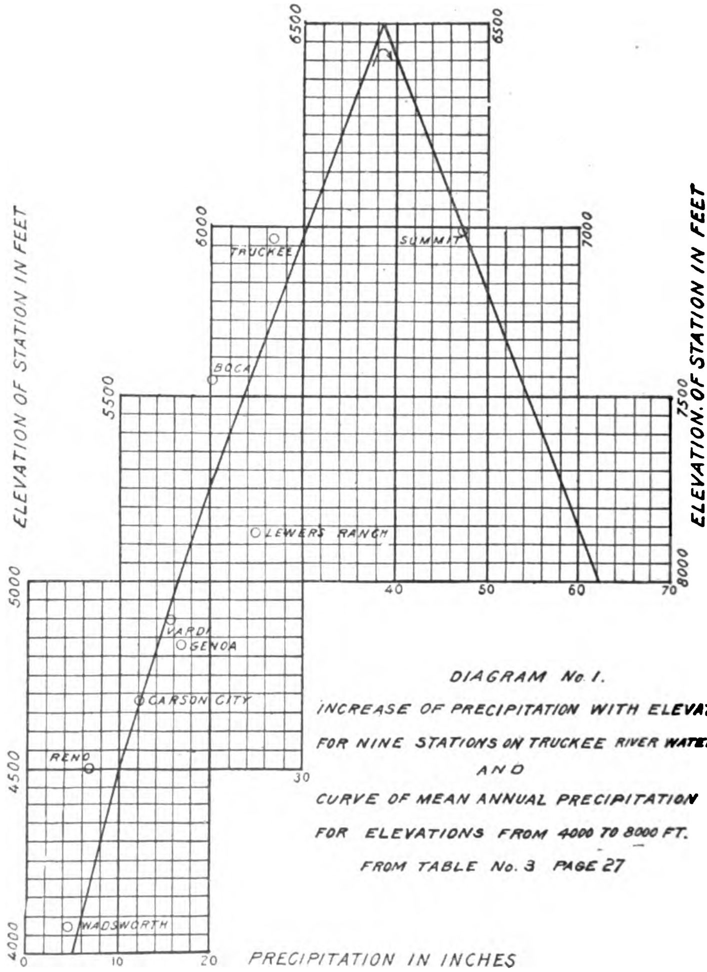


DIAGRAM No. 1.

INCREASE OF PRECIPITATION WITH ELEVATION
FOR NINE STATIONS ON TRUCKEE RIVER WATERSHED
AND
CURVE OF MEAN ANNUAL PRECIPITATION
FOR ELEVATIONS FROM 4000 TO 8000 FT.
FROM TABLE No. 3 PAGE 27

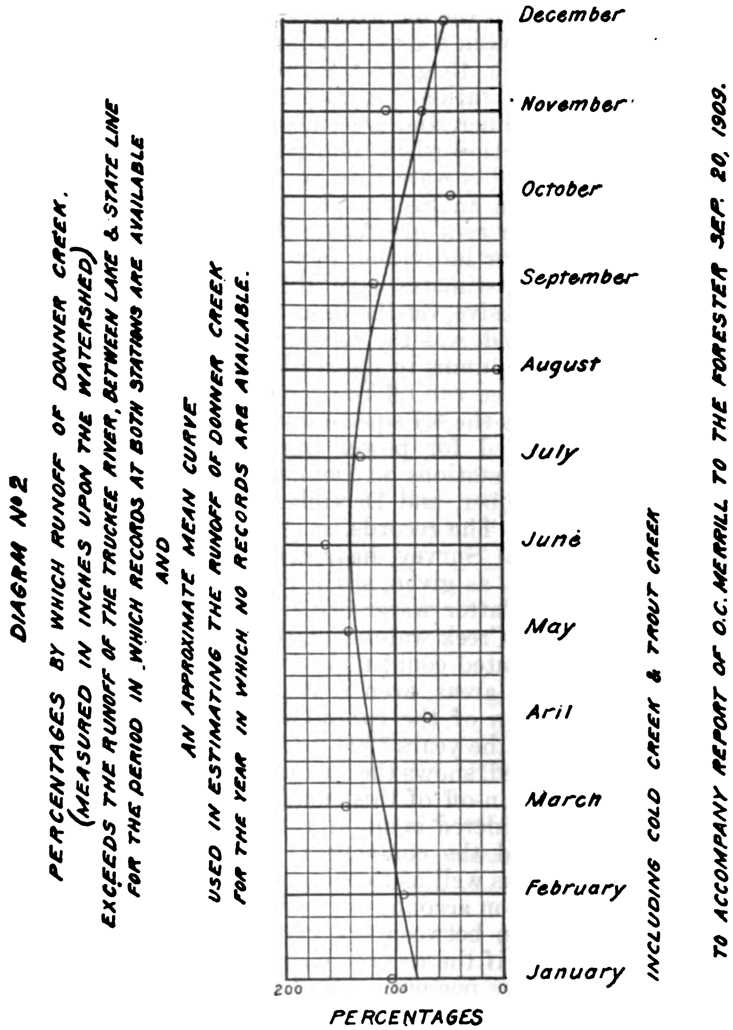
TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909.

Truckee River watershed between the outlet of Lake Tahoe and the California-Nevada State line, and has been determined by taking the difference between the average run-offs of the two stations during the same months for the several years, 1900 to 1906, inclusive, the longest period during which continuous records were available for both stations. Though the California-Nevada State line is several miles below Floriston, the only watershed area tributary to the stream throughout this distance is the immediate river canyon, and hence the difference in run-off between the two stations would be immaterial.

Section II of Table No. 15 gives the run-off records of the Little Truckee River at Pine Station. Actual records are available only for July, August, November, and December, 1903, and for the years 1904, 1905, 1906. The period when comparative records are available shows the run-off from this watershed to be practically the same as on the main river given in Section I, the run-off for the 3-year period being only 0.7 per cent greater on the Little Truckee than on the main river. Even for individual months during this period the variation is not wide. Estimates have, therefore, been made for the years 1900 to 1903, inclusive, on the assumption that the run-off, in inches upon the watershed, was the same on the two areas, and from these figures the other columns in the section have been computed.

Section III contains the run-off records for Donner Creek, below Cold Creek, and includes the 3.7 square miles of area of Trout Creek which could be developed for power purposes in connection with Donner Creek. For the stations on Donner Creek records are available for October, November, and December, 1902, and for the years 1903 to 1906, inclusive. The records, as given in the reports of the United States Geological Survey, have been increased about 10 per cent, so that Section III, as given, shall include the run-off of Trout Creek also. While the latter watershed lies at a lower average elevation than the Donner Creek watershed, the area is so small that its inclusion on the basis stated could make but small error in the total run-off of the combined areas, even if the assumed percentage were incorrect. A comparison of the run-off of Donner Creek with the main Truckee River for the years 1903 to 1906, inclusive, measured in inches upon the watershed, shows the former to be 2.2 times the latter. The greatly increased run-off of this small section as compared with the total watershed considered is due to the greater average elevation of the smaller area and the consequent greater precipitation (see Diagram No. 1, p. 16), as well as to the greater percentage of run-off on this small watershed on account of its steeper slopes.

Considerable variation between the ratios of the run-offs of the two areas will be found if the records be compared month by month. To determine the average percentage that could be applied to secure approximate figures of run-off for the years in which no records were available, the average run-offs, measured in inches upon the watershed, have been compared by months and plotted in Diagram No. 2. Through these plotted points an average curve has been drawn and from this curve have been taken the percentages, which applied to the figures of run-off in inches upon the watershed, as given in column 4, of section I, give the figures shown in section IV. The average annual run-off thus computed is 2.05 times the Truckee River run-off. The diagram shows that the average monthly percentages of run-off vary widely and increase to a maximum in June. While it is, of course, recognized that this method of estimation of run-off is approximate only and can be justified only because no actual records have been made for the years 1900, 1901, and the greater part of 1902, yet it is believed that the results are sufficiently close for the purpose of this report, which aims to give only approximate figures of the amounts of power that might be developed upon the watershed.



Section IV gives the run-off records of Prosser Creek at the gaging station below Alder Creek. But few records are available for this portion of the watershed. Such records as are given indicate that the run-off of this area, measured in inches upon the watershed, is about 70 per cent in excess of the run-off of the main Truckee watershed. The figures of run-off given in this section have, therefore, been obtained by increasing the figures given in the fourth column of section 1, by the percentages shown in table No. 5.

TABLE NO. 5.—*Percentages applied to run-off records of Truckee River from Tahoe to State line (measured in inches on the watershed) for the purpose of estimating the approximate run-off of certain other areas.*

Month.	Donner Creek.	Prosser Creek.	Webber, Independence, Twin, and Euers.	Little Truckee No. 1.[1]
January	[2] 180	[3] 149	[3] 184	[3] 182
February	195	162	200	197
March	210	174	215	212
April	225	187	230	227
May	235	195	241	237
June	240	199	246	242
July	235	195	241	237
August	225	187	230	227
September	210	174	215	212
October	190	157	195	192
November	170	141	174	172
December	150	124	154	152
Means	205	170	210	207

[1] Including Lower Independence Creek.
[2] From Diagram No. 2, p. 18.
[3] From Column No. 1, in proportion to the means.

As shown in Table No. 3, page 15, the probable precipitation on the watersheds of Webber Lake, Little Truckee Reservoir No. 1 (not including Webber Lake watershed), Independence Creek, and Twin and Euers Valleys is considerably in excess of the precipitation on the Donner Creek watershed. No run-off measurements for these specific areas have been made nor have any records been kept. Estimates have therefore been made on the basis of the run-off of Donner Creek, somewhat increased on account of the probably greater precipitation on the above-named areas. The estimated run-off, in inches upon the watershed, for the drainage basin of Little Truckee Reservoir No. 1, including Lower Independence Creek, has been assumed the same as for Donner Creek, namely, 2.05 times the corresponding run-off of Truckee River; and for Webber Lake, Upper Independence Creek, and Twin and Euers Valleys, as 2.1 times the corresponding run-off for the same periods on the main Truckee watershed. (See Table No. 5.)

Other sections shown in Table No. 12 are obtained by combining the records of two or more preceding sections.

No special studies have been made of the Lake Tahoe watershed because, as stated above, the records at the gauging station at Tahoe show the flow as modified by the operation of the dam and gates at the outlet. Tables Nos. 6 and 7, however, have been prepared, and give the average monthly discharge at the outlet for the years 1900 to 1908, inclusive. The figures of total run-off for any given period represent the available yield of the watershed for that period only if the lake level was the same at the end as at the beginning of the period of observation.

A diagram, adapted from a similar one prepared by D. W. Hayes of the United States Reclamation Service, is appended to this report, and shows, in curve No. 1, the variations in the level of Lake Tahoe from November, 1900, to December, 1908, inclusive. This diagram shows also that the amount held in storage at the latter date was 25,000 acre-feet in excess of the amount in storage at the earlier date. If the average discharge for the period be corrected by this amount, the mean annual run-off of the watershed for the eight years two months will be 309,000 acre-feet (see Tables Nos. 6 and 7, equivalent to a continuous flow of 423 cubic feet per second.

Table No. 6.—*Mean monthly discharge of Truckee River at Tahoe, Cal., in acre-feet, 1900–1908, inclusive.*

Month.	1900	1901	1902	1903	1904	1905	1906	1907	1908
January	....	6,262	7,686	16,356	18,750	25,210	18,700	42,900	46,400
February	....	4,502	4,054	5,720	6,385	24,050	22,000	40,700	38,200
March	....	1,845	3,197	11,683	24,660	19,740	27,200	47,000	36,600
April	....	565	2,856	774	36,300	1,244	29,000	48,000	12,600
May	....	....	5,964	799	49,130	10,640	33,400	56,500	3,490
June	3,106	1,765	5,653	2,261	53,490	12,620	35,300	67,200	3,210
July	13,131	13,809	12,543	12,605	53,680	18,630	44,600	79,900	19,100
August	14,261	25,760	24,964	21,152	48,930	24,040	46,300	76,900	27,900
September	11,667	19,395	20,826	23,683	45,280	22,910	45,200	72,000	23,300
October	9,781	17,308	19,922	22,996	41,320	23,980	44,600	67,600	21,800
November	8,047	14,678	20,588	15,174	42,310	18,150	41,400	55,000	17,900
December	4,981	6,841	20,045	15,987	37,750	16,660	39,800	50,600	17,100
Year	[1] 64,973	112,730	143,298	149,190	457,445	217,870	427,500	703,700	267,600

[1] Total of period.

Total discharge, November, 1900 (earliest date on which records of lake level are available), to December, 1908, inclusive, 2,497,000 acre-feet.

Storage in Lake Tahoe, Dec. 31, 1908, in excess of storage Nov. 1, 1900, 25,000 acre-feet.

Total yield of watershed, November, 1900, to December, 1908, inclusive, 2,522,000 acre-feet.

Mean annual discharge of watershed, November, 1900, to December, 1908, inclusive, 309,000 acre-feet. (From diagram prepared by U. S. Reclamation Service.)

Table No. 7.—*Mean monthly discharge of Truckee River at Tahoe, Cal., in cubic feet per second, 1900–1908, inclusive.*

Month.	1900	1901	1902	1903	1904	1905	1906	1907	1908
January	......	102	125	266	305	410	304	697	754
February	......	81	73	103	111	433	396	732	666
March	......	30	52	190	401	321	443	765	595
April	......	9	48	13	610	21	488	806	212
May	......	......	97	13	799	173	543	919	57
June	52	30	96	38	899	212	594	1,130	54
July	214	225	204	205	873	303	725	1,300	311
August	232	419	406	344	787	391	753	1,250	453
September	196	326	350	398	761	385	759	1,210	[illegible]
October	159	282	324	374	672	390	726	1,100	354
November	135	247	346	255	711	305	695	925	300
December	81	111	326	260	614	271	647	823	278
Year	[1] 153	155	204	205	629	301	589	971	369

[1] 7-month mean.

Mean discharge, Nov., 1900 (earliest date on which records of lake level are available). Dec., 1908, inclusive, 423 cubic feet per second (including the 25,000 acre-feet storage in Lake Tahoe on Dec. 31, 1908, in excess of the storage therein Nov. 1, 1900. See Table No. 6).

RESERVOIRS AND STORAGE.

Lakes.—Within the upper watershed of the Truckee River are numerous lakes, several of which are of sufficient size to afford considerable natural storage and to serve as regulators of the flow of the river and its tributaries. Of these the largest is Lake Tahoe, with an area of 193 square miles. Four others are of interest in this connection, because of their possible enlargement as reservoir sites. These are Webber Lake, area 220 acres, Independence Lake, area 700 acres, Donner Lake, area 840 acres, and Washoe Lake, area 3,500 acres.

Reservoirs.—Many possible reservoir sites exist on the watershed above Vista, Nev. These vary widely in capacity and in cost of development, some sites involving merely the enlargement of the storage capacity of the lakes mentioned above, others the construction of artificial reservoirs. Of all the possible sites upon the watershed the following 12 are believed to be feasible of construction, namely: Webber Lake, Little Truckee No. 1, Henness Pass, Independence Lake, Twin Valley, Euers Valley, Donner Lake, Squaw Valley, Dog Valley, Lake Tahoe, Lake Washoe, and Little Valley. With the exception of Euers Valley and Lake Washoe and Little Valley all the above sites have been recommended for construction by the Reclamation Service for the benefit of the Truckee-Carson Reclamation project. Description of these sites may be found in Water Supply Paper No. 68, 1902, page 40, of the United States Geological Survey, from which the greater part of the data contained in the pages immediately following have been taken.

A field examination was made of all the above-named sites with the exception of Henness Pass, Squaw Valley, and Dog Valley. The last two are of only minor importance because of their small capacity, and the last one has not been considered in estimating the probable flow available at Vista, Nev. The examination of the sites in question has led to the conclusion that, as far as physical features are concerned, the capacity of several of these sites can be largely increased over the estimate given in Water Supply Paper No. 68. The run-off studies made in this report show that there is sufficient water for these increased capacities and that in every instance during the seven years for which the studies have been made, even with the increased capacities, water would have been wasted annually over the dams in amounts varying from 4 per cent to 480 per cent of the average amounts made available by storage.

Whether in any particular instance the additional power derived from storage of water in several reservoirs would warrant the expense of their construction, is a question that could be decided only by careful studies based on surveys, not only of reservoir sites, but also of conduit lines, power-house locations, etc., and on detailed cost estimates of all the features involved, studies that are obviously beyond the province of this report.

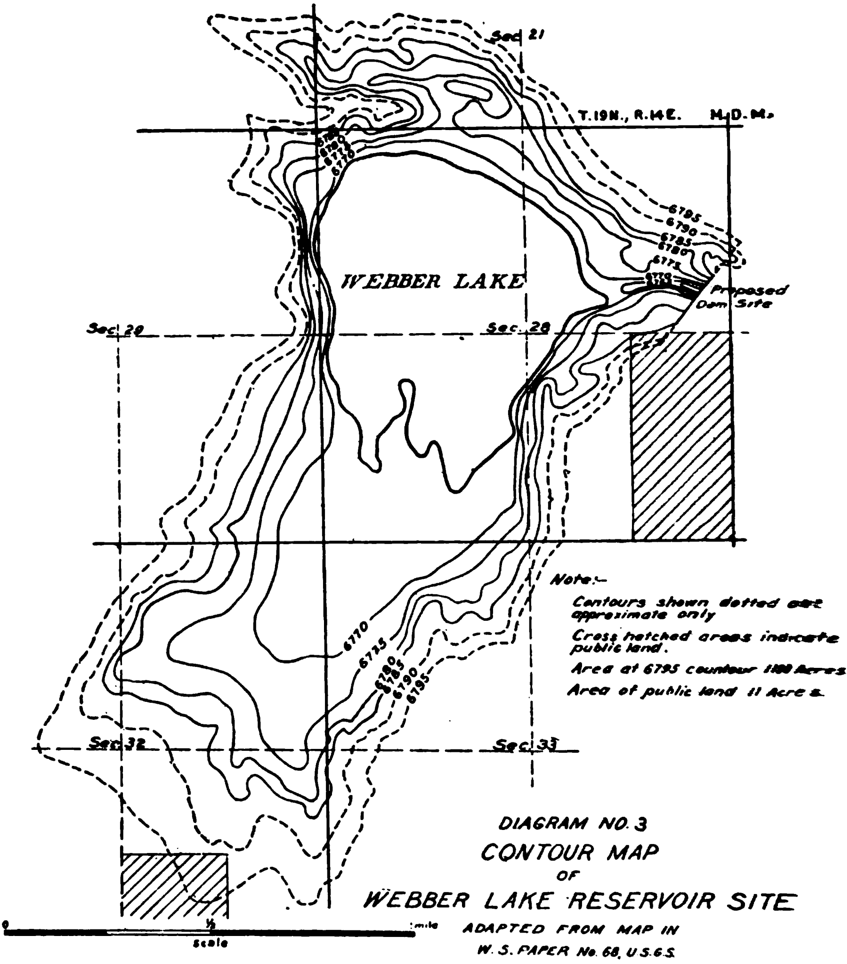
In the following pages will be given a brief description of the several possible sites together with maps of surveys and diagrams of storage capacity:

Webber Lake.—Location: According to the surveys of the United States Geological Survey this reservoir site is located in secs. 21, 28, 29, 32, and 33, T. 19 N., R. 14 E., M. D. M. The Land Office map shows that the lake lies almost entirely within sec. 28, with a small portion only in sec. 21.

Status of land: The only public lands in the immediate vicinity of the reservoir site are the NE. ¼ SE. ¼ and SE. ¼ SE. ¼ of sec. 28 and SW. ¼ SE. ¼ sec. 32. These areas are at too high an elevation to be flooded except in small part by the construction of the reservoir. All the remaining lands in secs. 28 and 32 and all land in sec. 20 that could be affected by the construction of the reservoir are "patented," while all of secs. 21, 27, 29, and 33 are "railroad selection approved."

Reclamation withdrawals: The following lands in the vicinity of Webber Lake were withdrawn by the Reclamation Service "under first form" on October 13, 1908:

T. 19 N., R. 14 E., M. D. M.; sec. 20, E. ½ SE. ¼; sec. 21, S. ½; sec. 27, W. ½ NW. ¼; sec. 28, entire; sec. 29, E. ½; sec. 32, E. ½ NW. ¼, NE. ¼, SE. ¼; sec. 33, NW. ¼, W. ½ NE. ¼, SW. ¼.



Note:—

Contours shown dotted are approximate only

Cross hatched areas indicate public land.

Area at 6795 contour 1100 Acres.

Area of public land 11 Acres.

DIAGRAM NO. 3
CONTOUR MAP
OF
WEBBER LAKE RESERVOIR SITE

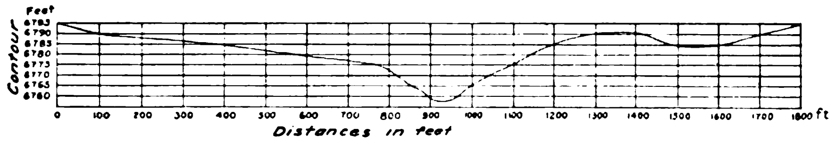
ADAPTED FROM MAP IN
W. S. PAPER No. 68, U.S.G.S.

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909

Maps and diagrams: Diagram No. 3 presents a contour map of th proposed site, based upon a similar map presented on page 41 c Water Supply Paper No. 68 of the United States Geological Surve On page 23 will be found a profile of the dam site, also from th above paper, and a diagram of capacities based upon the map co tained herein.

Dam: All the estimates made by Mr. Taylor for the United Stat Geological Survey (see Water Supply Paper No. 68) for reservoi on the Truckee watershed contemplated the construction of earth dams of low elevation protected on the interior by riprap and without core walls. To raise the water on this site to the 6,795 contour would require a dam approximately 40 feet in extreme height and 1,800 feet in length. Such a dam is perfectly feasible of construction. The only question, as stated above, from the point of view of the development of power, is the economic one, whether the probable returns from sale of power justify the cost of the works, and can not be discussed here. These same remarks will apply to all succeeding dams and reservoirs.

DIAGRAM No 4
PROFILE OF WEBBER LAKE RESERVOIR DAM SITE
FROM W. S. PAPER No. 68, U. S. G. S.



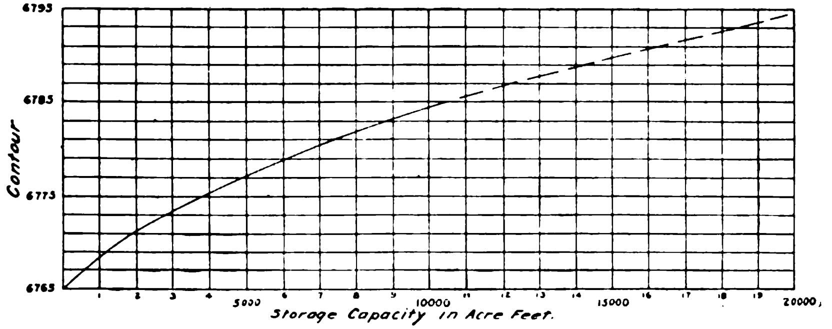


DIAGRAM NO. 5
CURVE OF STORAGE CAPACITY
OF
WEBBER LAKE RESERVOIR
AT
VARIOUS ELEVATIONS OF WATER SURFACE

Note:– Dotted line shows approximate capacity for elevations shown by dotted contours on Diagram No. 3 page 47

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 28, 1909.

Area and storage capacity: The surface area of this reservoir at the high-water mark is estimated to be about 1,100 acres, of which about 11 acres would be on national forest land. Diagram No. 5 shows the storage capacity of the proposed reservoir at all levels between the contours 6,775 and 6,795. The capacity at the high-water mark is approximately 20,000 acre-feet, and that figure has been used in the subsequent estimates of power.

Little Truckee Reservoir No. 1.—Location: This reservoir, designated as above by Mr. Taylor, is situated in secs. 23, 24, 25, and 26, T. 19 N., R. 14 E., and in secs. 16, 17, 20, and 21, T. 19 N., R. 15 E., M. D. M. This site was surveyed in 1889–90 by the United States Geological Survey and is described as follows in Water Supply Paper No. 68:

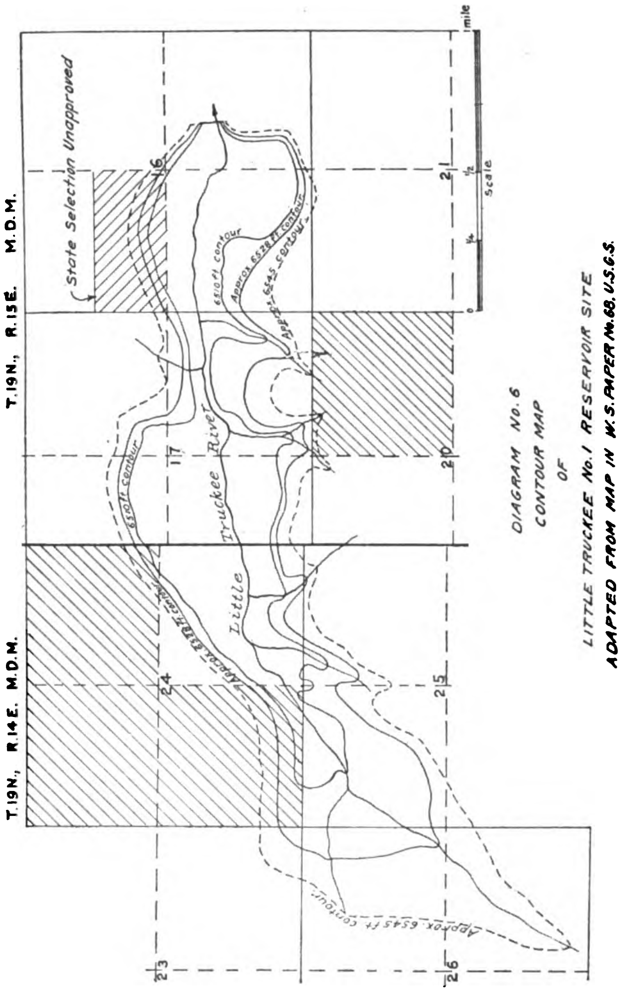


DIAGRAM No. 6
CONTOUR MAP
OF
LITTLE TRUCKEE No. 1 RESERVOIR SITE
ADAPTED FROM MAP IN W. S. PAPER No. 68, U.S.G.S.

Note:- Dotted contour an approximate only.
Cross hatched areas indicate public lands.
Area at high water line 1095 Acres.
Area of public land 102 Acres.

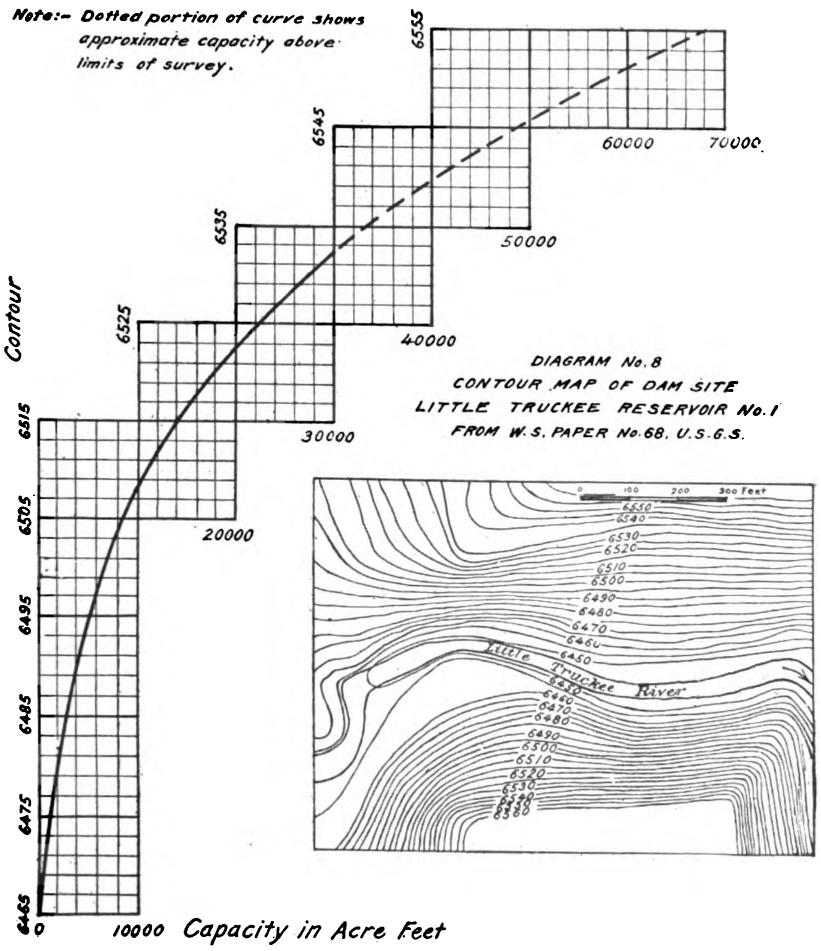
TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1909.

> It occupies a valley of irregular width extending about 3 miles up from a narrow canyon, through which the stream flows, and where it is proposed to construct the impounding dams. * * *
>
> The survey which was made during 1889–90 consisted of the measurement of a cross section of the canyon at the dam site, the meandering of a contour 60 feet above the base of the proposed dam, and the measurement of several cross sections of the valley below this contour * * *. An examination of the site

made in 1900 demonstrated the feasibility and economy of raising the water 18 feet higher than was contemplated by the earlier survey by constructing the dam a little farther down the canyon and raising it to a height of 87 feet. A contour map of the dam site as now proposed is shown in figure 13. (Reproduced in diagram No. 6, p. 24.)

Status of land: The only Government lands in T. 19 N., R. 15 E., that might be involved in the construction of this reservoir are the N. ½ NE. ¼ sec. 20 and the S. ½ NW. ¼ sec. 16. The latter is designated as "State selection unapproved." In sec. 24, T. 19 N., R. 14 E., the NE. ¼, NW. ¼, and SW. ¼ are Government land, and portions of both the NE. ¼ and SW. ¼ would probably be flooded by a reservoir. The remaining lands are "school," sec. 16, T. 19 N., R. 15 E.; "rail-

DIAGRAM No. 7.
CURVE OF CAPACITIES OF LITTLE TRUCKEE RESERVOIR No. 1
AT VARYING ELEVATIONS OF WATER SURFACE

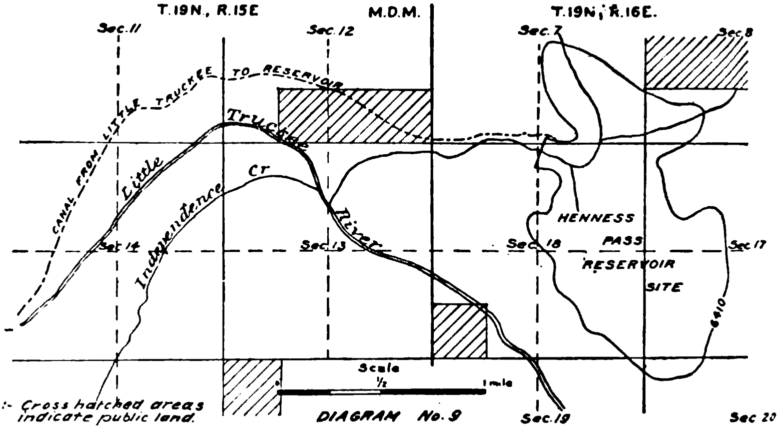


Note:- Dotted portion of curve shows approximate capacity above limits of survey.

DIAGRAM No. 8
CONTOUR MAP OF DAM SITE
LITTLE TRUCKEE RESERVOIR No. 1
FROM W. S. PAPER No. 68, U. S. G. S.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1909.

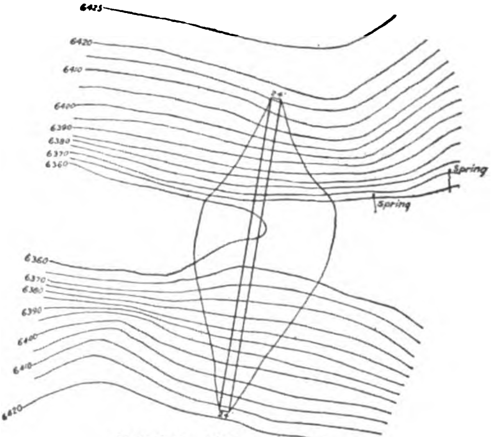
road selection approved," secs. 17 and 21, T. 19 N., R. 15 E., and secs. 23 and 25, T. 19 N., R. 14 E.; "patented," portions of sec. 20. T. 19 N., R. 15 E., and all of secs. 24 and 26, T. 19 N., R. 14 E; and "cash entry," NW. ¼ sec. 26, T. 19 N., R. 14 E., M. D. M.



Note:- Cross hatched areas indicate public land.

Area of Reservoir 590 Acres

DIAGRAM No. 9
CONTOUR MAP
OF
HENNESS PASS RESERVOIR SITE
FROM W.S. PAPER No. 68. U.S.G.S.



CONTOUR MAP
OF
HENNESS PASS RESERVOIR DAM SITE
FROM W. S. PAPER No. 68, U.S.G.S.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP., 20, 1909.

Reclamation withdrawals: The following lands were withdrawn by the Reclamation Service "under first form" October 13, 1908:

T. 19 N., R. 14 E., M. D. M.: Sec. 23, SE. ¼; sec. 24, entire; sec. 25, entire; sec. 26, entire.

T. 19 N., R. 15 E., M. D. M.: Sec. 16, entire; sec. 17, entire; sec. 20, N. ½ NE. ¼, N. ½ NW. ¼; sec. 21, N. ½ NE. ¼, N. ½ NW. ¼.

Maps and diagrams: On pages 24 and 25 may be found a rough contour map of the proposed reservoir site, a contour map of the dam site, and a diagram of storage capacities. These maps are based on similar ones in Water Supply Paper No. 68, but extended to provide for the large capacities believed to be feasible.

Dam: A dam necessary to produce the capacity estimated upon would be approximately 110 feet in maximum height and 640 feet in maximum length.

Area and storage capacity: The area of the proposed reservoir at the high-water line would be approximately 1,095 acres, of which about 102 acres would be on national-forest land.

Diagram No. 7, page 25, shows the storage capacity of the reservoir at varying elevations of water surface. The capacity assumed for the estimate of the power in the succeeding pages is 60,000 acre-feet.

Henness Pass reservoir site.—Location: As shown on the accompanying map, this reservoir is located in secs. 7, 8, 17, 18, 19, and 20, T. 19 N., R. 16 E., M. D. M.

This reservoir site occupies a small basin immediately to the north of the valley of the Little Truckee River, opposite the junction of that stream and Independence Creek, from which it is separated by a narrow rocky ridge. About 200 acres of the floor of this basin are perfectly level, somewhat marshy in character, and on the west and south are bounded by the narrow ridge mentioned, which rises from it abruptly, while to the north and east the ground rises very gradually. The elevaton is about 6,367 feet above sea level. The immediate drainage area consists of 4½ square miles of undulating ridges almost bare of timber. The main water supply for the reservoir will be drawn from Little Truckee River by means of a canal about 4 miles in length, having a capacity of 100 cubic feet per second, heading a short distance below the dam for Little Truckee Reservoir, last described. (Water Supply Paper No. 68, p. 66.)

Status of land: The Land Office map shows the entire area included within this reservoir site to be either "patented" or "railroad selection approved." In the latter classification it is all of secs. 7, 17, 18, and 19; in the former all the land affected in secs. 8, 19, and 20.

Reclamation withdrawals: The following withdrawals were made "under first form" October 13, 1908, by the Reclamation Service:

T. 19 N., R. 16 E., M. D. M.: Sec. 7, entire; sec. 8, entire; sec. 17, entire; sec. 18, entire; sec. 20, NW. ¼.

Maps and diagrams: On page 26 is given a copy of a map of the reservoir and dam site as presented in Water Supply Paper No. 68.

Dam: "The dam site * * * is in the canyon leading out of the valley of the Little Truckee River: maximum height of the dam will be 56 feet, its length on top 720 feet, and its top width 24 feet. It will be of earth of the hydraulic-fill type * * *. The material for the structure is a clayey earth containing some gravel, cobbles, and bowlders." (Water Supply Paper No. 68, p. 67.)

Area and storage capacity: The area of the reservoir at the high-water level is estimated to be 590 acres, none of which would be on public land. However, somewhat more than one-half mile of the canal proposed for bringing the water to this site from the Little Truckee River would be on national forest land.

This reservoir site was surveyed by D. K. Stewart for Hon. Francis G. Newlands in 1890, a contour 50 feet above the floor being meandered and a few cross sections of the basin measured, from which data the area and capacity were computed. * * * The elevation of the floor of the canyon at the dam site is taken at 6,360 feet above sea level * * *. The estimated capacity is 17,000 acre-feet.

Lake Independence reservoir site.—Location: This reservoir site is located in secs. 33, 34, and 35, T. 19 N., R. 15 E., M. D. M., and in secs. 2, 3, 4, 5, 8, and 9, T. 18 N., R. 15 E., M. D. M.

> Independence Lake is * * * of glacial origin, immediately under the Sierra's crest, and held lengthwise between high precipitous spurs projecting at right angles to it * * *. Its ordinary water surface is about 2½ miles in length, somewhat less than a half mile in width, and covers an area of 709 acres. It is about 7,000 feet above sea level.
>
> A survey for a storage reservoir was made at the site in 1889 * * *. The margin of the lake and a contour 25 feet above were meandered, and a number of cross sections of the valley were measured, supplying the data from which the area and capacity of the reservoir were computed. (Water Supply Paper No. 68, p. 56.)

Status of land: The only Government land that may be flooded by the construction of this reservoir is in the SW. ¼ NW. ¼, and NE. ¼ NW. ¼, sec. 4; and S. ½ NE. ¼ and SE. ¼ NW. ¼, sec. 8, T. 18 N., R. 15 E., M. D. M. A small area, with status undetermined, in the SW. ¼ NE. ¼ sec. 4, T. 18 N., R. 15 E., would be flooded by the construction of this reservoir and also the greater part of the N. ½ NE. ¼ sec. 8, in the same township, designated as "State selection unapproved." The remaining lands involved, in secs. 34, T. 17 N., R. 15 E. and secs. 2 and 4, T. 18 N., R. 15 E., are "patented," while secs. 33 and 35, T. 19 N., R. 15 E., and secs. 3, 5, and 9, T. 18 N., R. 15 E., are "railroad selection approved."

Reclamation withdrawals: On October 13, 1908, "under first form," the Reclamation Service withdrew the following lands:

T. 18 N., R. 15 E., M. D. M.: Sec. 2, NW. ¼; sec. 3, entire; sec. 4, entire; sec. 5, SE. ¼; sec. 8, NE. ¼, N. ½ SE. ¼; sec. 9, W. ½ NE. ¼, NW. ¼, N. ½, SW. ¼, NW. ¼ SE. ¼.

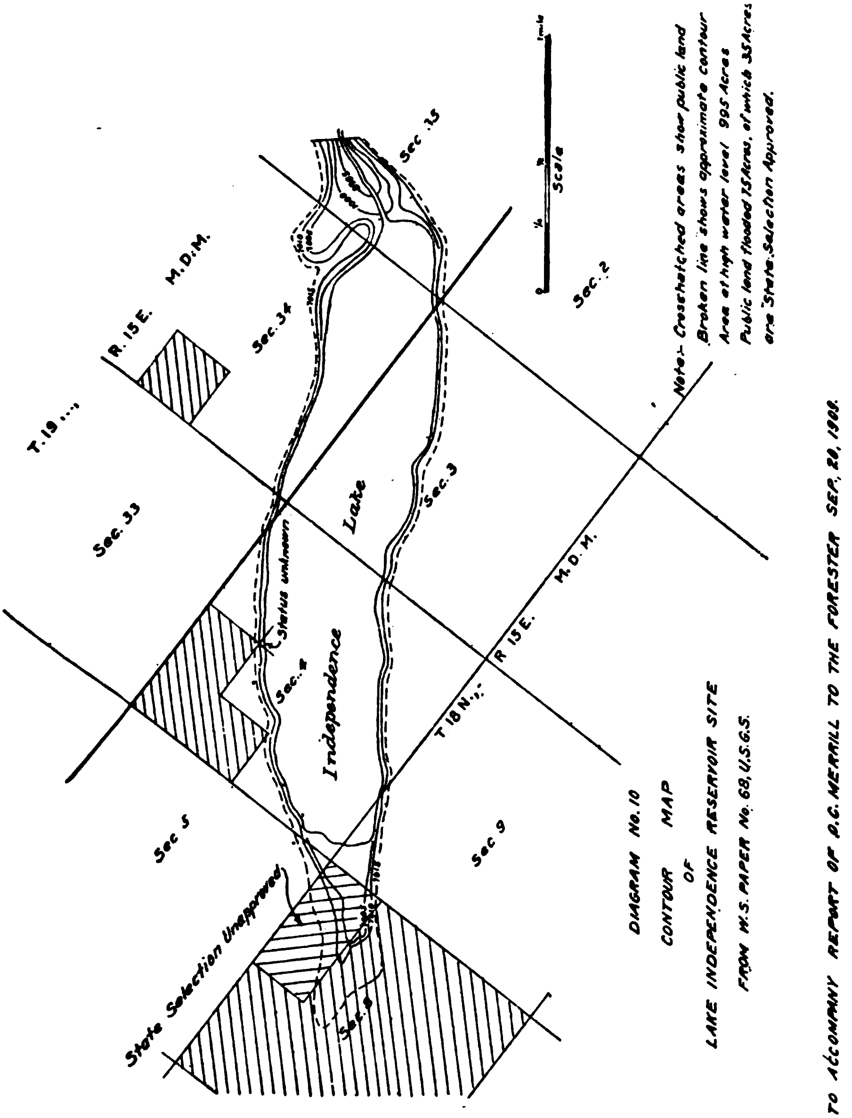
T. 19 N., R. 15 E., M. D. M.: Sec. 33, SE. ¼; sec. 34, entire; sec. 35, entire.

Maps and diagrams: On page 29 may be found a contour map of this site adapted from a similar map in Water Supply Paper No. 68, United States Geological Survey, and on page 30 diagrams showing a profile of the proposed dam site and a curve of reservoir capacities at various elevations of water surface taken from data contained in the above-named report.

Dam: It has been proposed to build an earth dam at a point about 1,800 feet below the present outlet of the lake, where the bed of the stream is about 12 feet below the lake level and where an old terminal moraine forms a natural dam for a portion of the cross section. To raise the level of the lake to the 7014 contour would require a dam approximately 30 feet in height above the stream bed and 960 feet in length along the crest.

Area and storage capacity: The estimated area of water surface at contour 7014 is 995 acres, of which approximately 40 acres would be on national forest land.

Though earlier studies made by Mr. Taylor and published in Water Supply Paper No. 68 led him to conclude that the run-off of the watershed would not be sufficient to fill the reservoir above the 7010 contour, the studies herein contained, based upon much longer records than were available to Mr. Taylor, indicate that the yield of the watershed would be sufficient, through a series of years, to warrant estimates upon the basis of filling the reservoir to the 7014 contour. The excavation of the present outlet channel, allowing of lowering the lake level 5 feet below the present low-water line, would afford a maximum storage capacity between extreme levels of about 15,000 acre-feet, and this amount has been used in making power estimates for this report.



Note:- Crosshatched areas show public land
Broken line shows approximate contour
Area at high water level 995 Acres
Public land flooded 75 Acres, of which 35 Acres are State Selection Approved.

DIAGRAM No. 10
CONTOUR MAP
OF
LAKE INDEPENDENCE RESERVOIR SITE
FROM W.S. PAPER No. 68, U.S.G.S.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1909.

Twin Valley reservoir site.—Location: This site is located in secs. 13, 14, 23, 24, and 25, T. 18 N., R. 15 E., and secs. 19 and 30, T. 18. N., R. 16 E., M. D. M.

This reservoir is on the North Fork of Prosser Creek, one of the main branches of the Truckee River, about 4 miles in a direct line, a little east of south of Independence Lake and at an approximate altitude of 6,300 feet above sea level

DIAGRAM No. 11

PROFILE OF PROPOSED DAM SITE, LAKE INDEPENDENCE

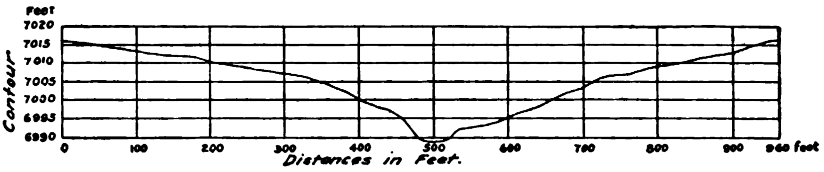
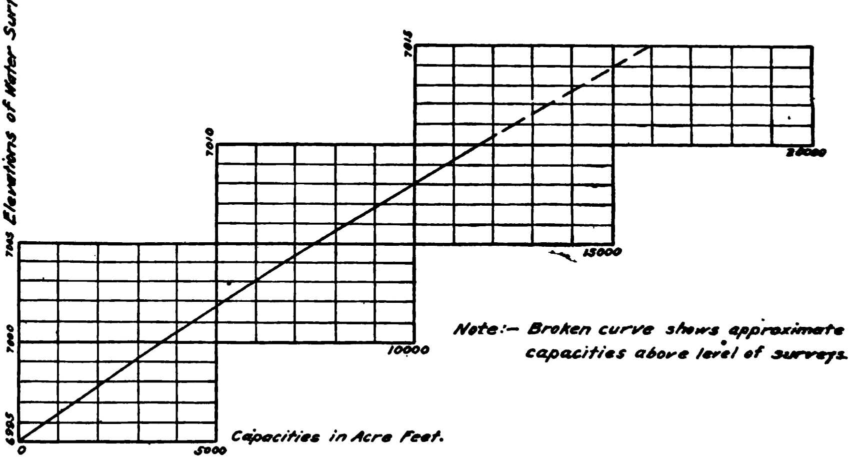


DIAGRAM No. 12

CURVE OF CAPACITIES OF LAKE INDEPENDENCE RESERVOIR
AT VARYING ELEVATIONS OF WATER SURFACE.



Note:— Broken curve shows approximate capacities above level of surveys.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP., 20, 1909.

A survey of the reservoir site was made during the fiscal year 1889–90, a cross section of the dam site being measured, a contour 30 feet above the lowest point at the dam site meandered, and several cross sections of the reservoir surveyed to supply data for calculating the capacity. (Water Supply Paper No. 68, p. 59.)

Status of land: Three forties of public land in sec. 24, T. 18 N., R. 15 E., namely, SE. ¼ NE. ¼, NE. ¼ NW. ¼, and SW. ¼ SE. ¼, would probably be flooded in part by the construction of this reservoir. The remaining land affected in secs. 14 and 24, T. 18 N., R. 15 E., and in sec. 30, T. 18 N., R. 16 E., are "patented," while secs. 13, 23, and 25, T. 18 N., R 15 E., and sec. 19, T. 18 N., R. 16 E., are "railroad selection approved."

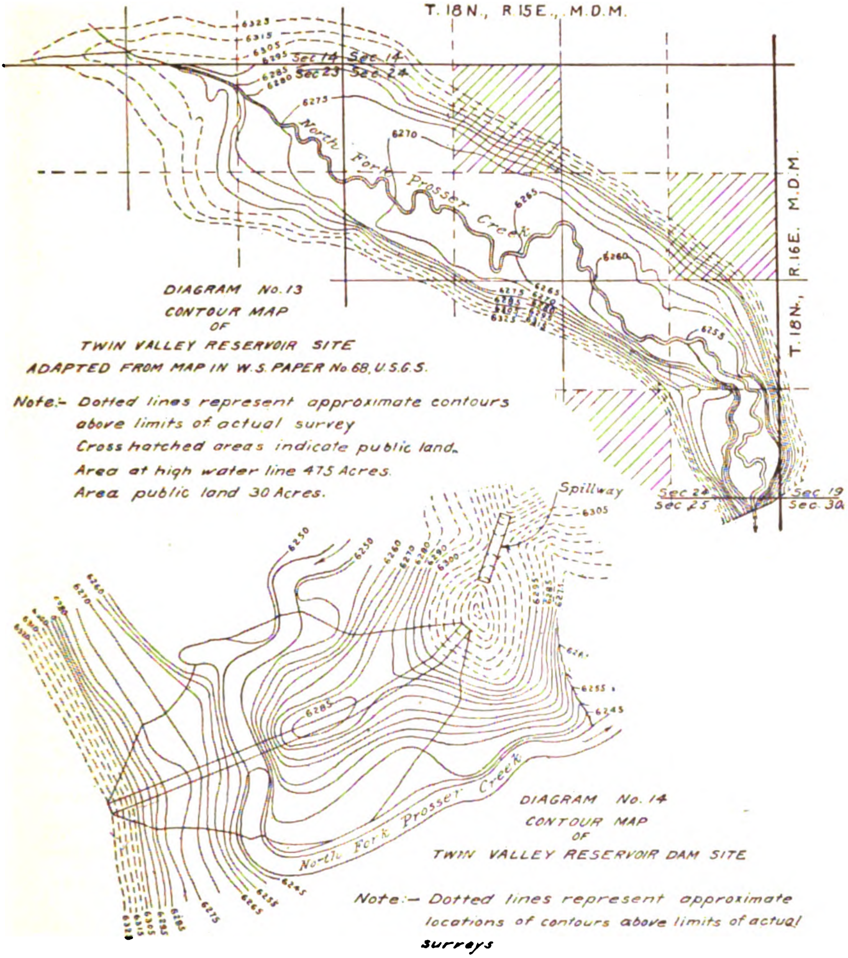


DIAGRAM No. 13
CONTOUR MAP
OF
TWIN VALLEY RESERVOIR SITE
ADAPTED FROM MAP IN W. S. PAPER No 68, U.S.G.S.

Note:- Dotted lines represent approximate contours above limits of actual survey
Cross hatched areas indicate public land.
Area at high water line 475 Acres.
Area public land 30 Acres.

DIAGRAM No. 14
CONTOUR MAP
OF
TWIN VALLEY RESERVOIR DAM SITE

Note:— Dotted lines represent approximate locations of contours above limits of actual surveys

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909.

Reclamation withdrawals: The Reclamation Service withdrawals of October 13, 1908, "under first form," on this site, are as follows:

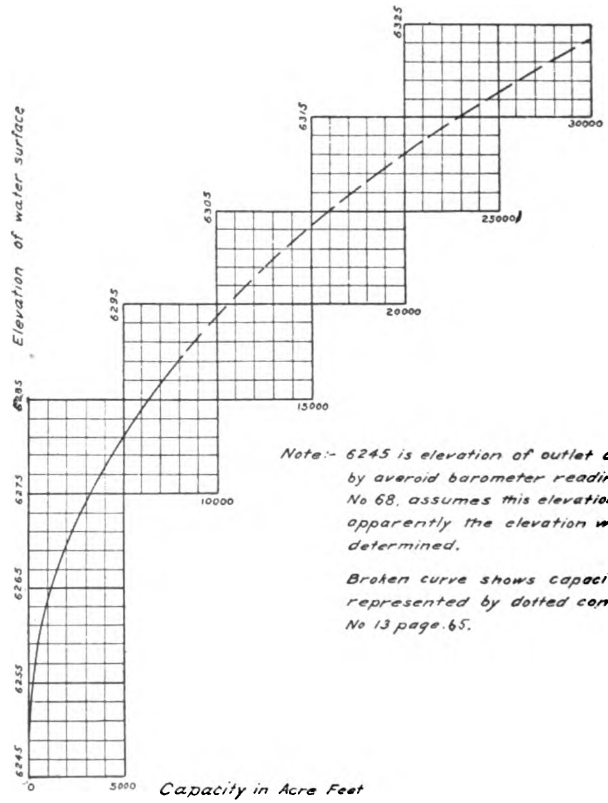
T. 18 N., R. 15 E., M. D. M.: Sec. 13, S. ½ SW. ¼; sec. 14, S. ½ SE. ¼; sec. 23, NE. ¼; sec. 24, entire; sec. 25, N. ½ NE. ¼.

T. 18 N., R. 16 E., M. D. M.: Sec. 19, SW. ¼ NW. ¼, W. ½ SW. ¼; sec. 30, NW. ¼ NW. ¼.

Maps and diagrams: On pages 31 and 32 are given contour maps of the reservoir and dam sites, adapted from similar maps in Water Supply Paper No. 68, and a diagram of storage capacities at various elevations of water surface.

Dam: The dam site is in a narrow place in the valley, which has been partially closed by an ancient glacial moraine between which and the high granite ridge to the southwest the creek flows. It is proposed to raise this moraine somewhat and to dam the gorge now occupied by the stream by means of an earth embankment to be put in place by scrapers. The maximum height of the embankment would be 55 feet and the top length over all 760 feet. (Water Supply Paper No. 68, p. 60.)

DIAGRAM No. 15
CURVE OF CAPACITIES OF TWIN VALLEY RESERVOIR SITE
AT
VARYING ELEVATIONS OF WATER SURFACES
FROM RECORDS IN W. S. PAPER No. 68, 1902, U.S.G.S.



Note:- 6245 is elevation of outlet as determined by aeroid barometer readings. W. S. Paper No 68. assumes this elevation as 6300 but apparently the elevation was not actually determined.

Broken curve shows capacity at elevations represented by dotted contours on Diagram No 13 page 65.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1909.

This site was carefully examined and measured during the field examination of August 19–21, 1909, and it is believed that the site is so favorable that a dam considerably higher than the one proposed by Mr. Taylor could be constructed at this location. Estimates have, therefore, been made upon a dam 78 feet in height, raising the water level to contour 6290. (Elevation estimated by aneroid barometer, see note, Diagram No. 15, p. 32.) Such a dam would be approximately 1,000 feet in length. Outlet works are assumed to be at elevation 6265, since the storage capacity below that level is only about 1,000 acre-feet. (See diagram No. 15, p. 32.)

Area and storage capacity: The estimated area of water surface at the high-water mark is 475 acres, of which approximately 30 acres would be on public land.

The estimated maximum storage capacity for this reservoir, as shown on Diagram No. 15, page 32, is 27,000 acre-feet.

Euers Valley reservoir site.—Location: This site is located on the South Fork of Prosser Creek. No surveys have been made for a reservoir at the location and the feasibility of its construction is, therefore, not certain. If constructed it would probably flood portions of secs. 25, 26, 35, and 36, T. 18 N., R. 15 E., M. D. M.

Status of land: No Government land would be involved, as the overflowed portions of sec. 26 would be " patented " land; all of sec. 36 " school " land; and all of secs. 25 and 35 " railroad selection approved."

Reclamation withdrawals: No reclamation withdrawals, as far as is known, have been made on this site.

Maps and diagrams: Since no surveys of this site have been made no data are at hand for the preparation of maps or diagrams.

Dam: A good location for a dam is afforded in SE. ¼ sec. 25, where the canyon narrows and the stream begins to drop rapidly to join the North Fork at about a half mile below the proposed dam site. The valley floor is comparatively level for a distance of 1½ to 2 miles and is approximately one-half mile in extreme width.

Storage capacity: In the absence of surveys of the site no reliable estimates of storage capacities can be made. A capacity of 2,000 acre-feet has, however, been assumed for this reservoir. The quantity is, however, so small relatively that any error in this assumption will have very little effect upon the final results.

Donner Lake reservoir site.—Location: This reservoir site is located in secs. 12, 13, 14, and 15, T. 17 N., R. 15 E., M. D. M., and in secs. 7, 17, and 18, T. 17 N., R. 16 E., M. D. M.

> Donner Lake * * * occupies a glacial basin lying close under the crest of the main Sierra Nevadas and lengthwise between two spurs which jut eastward therefrom. Its ordinary water surface is almost 3 miles long, with a nearly uniform width of approximately a half mile. * * * It is about 3 miles west of the town of Truckee and immediately north of and below the line of the Central Pacific Railroad * * *.
>
> The old glacial basin of Donner Lake extends eastward as a valley about 1¾ miles beyond the limits of the lake, thence its outlet is to the south through a gap in a granite ridge into Truckee River Valley. Cold Creek, flowing in from the south, joins Donner Creek * * * about three-fourths of a mile east of the lower end of the lake." (Water Supply Paper No. 68, p. 51.)

Status of land: The only public land which would be affected by the construction of this reservoir is in the S. ½ SE. ¼ sec. 12, T. 17 N., R. 15 E., designated on the Land Office plats as " State selection unapproved." All the remaining lands are either " patented," " State selection approved," or " railroad selection approved."

Reclamation withdrawals: The following lands were withdrawn October 13, 1908, "under first form," by the Reclamation Service:

T. 17 N., R. 15 E., M. D. M.: Sec. 12, S. ½, SE. ¼; sec. 13, entire; sec. 14, entire; sec. 15, entire.

T. 17 N., R. 16 E., N. D. M.: Sec. 7, S. ½, SW. ¼; sec. 17, entire; sec. 18, entire.

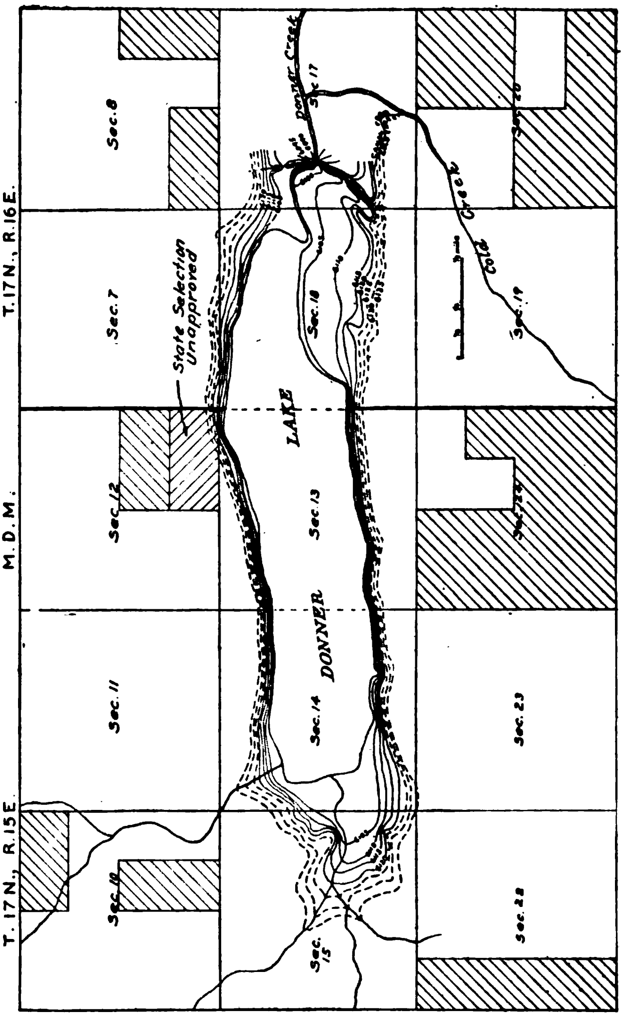


DIAGRAM No. 16

CONTOUR MAP OF DONNER LAKE RESERVOIR SITE

ADAPTED FROM MAP IN W. S. PAPER No. 68, U.S.G.S.

Notes:— Broken lines represent contours above limits of surveys.
Cross hatched areas represent public land.
Area at high water level 1070 Acres.
Area of public land . . . . . . 6 Acres.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1908

Maps and diagrams: On pages 34 and 35 will be found a contour map of the reservoir site and a profile of the proposed dam site, both adapted from similar maps in Water Supply Paper No. 68. A diagram is also given (see p. 35), showing the storage capacity of the reservoir at various elevations of water surface.

Dam: The project for the utilization of Donner Lake Basin for a reservoir contemplates the construction of a long, low dam following an ancient terminal moraine nearly half a mile from the lower end of the lake, and impounding not only the surplus water of the Donner Lake watershed, but those of the Cold Creek drainage basin also, by leading them into the reservoir by means of a canal about 3,000 feet in length * * *. Several years ago Hon. Francis G. Newlands had constructed across Donner Creek, a few hundred yards below the lake, a timber dam of sufficient height to raise the water 10 or 11 feet above the low-water plane. This structure was not kept in repair, however, and it is now in a condition only to retain the water to a height of 6½ to 7 feet.

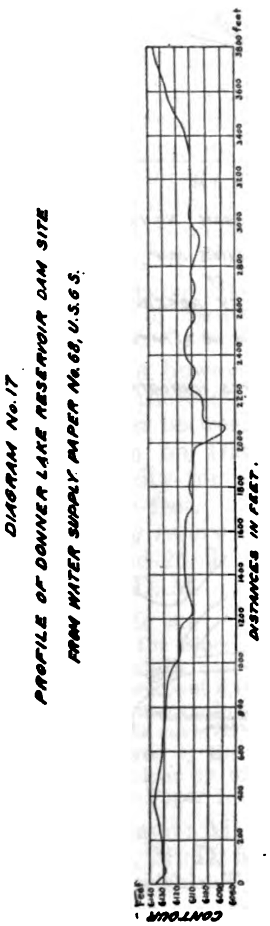


DIAGRAM No.17

PROFILE OF DONNER LAKE RESERVOIR DAM SITE

FROM WATER SUPPLY PAPER No.68, U.S.G.S.

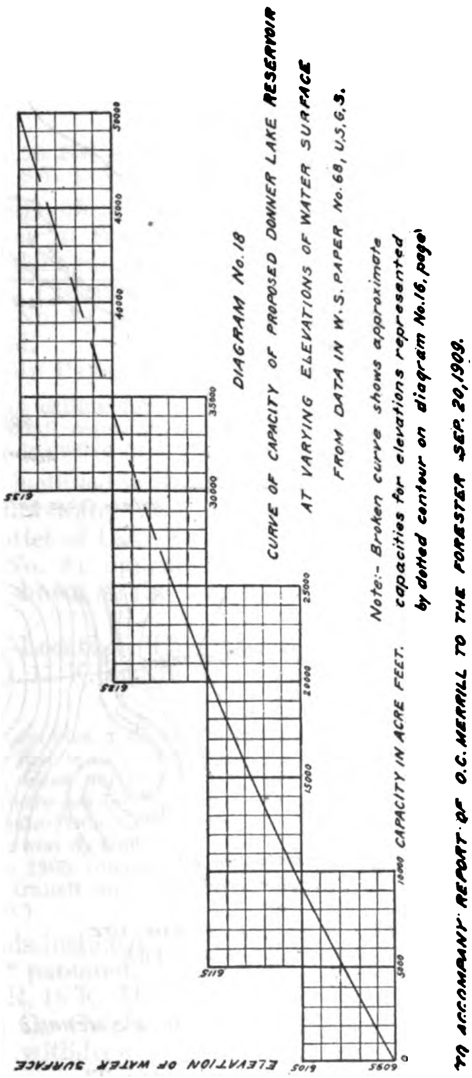


DIAGRAM No.18

CURVE OF CAPACITY OF PROPOSED DONNER LAKE RESERVOIR

AT VARYING ELEVATIONS OF WATER SURFACE

FROM DATA IN W.S. PAPER No.68, U.S.G.S.

Note:- Broken curve shows approximate capacities for elevations represented by dotted contour on diagram No.16, page

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20,1909.

* * * It will be necessary to build an earth dam or embankment along the crest of the ancient glacial moraine previously referred to, for a total length of 2,630 feet and a maximum height of 38 feet in the narrow gap through which Donner Creek flows. (Water Supply Paper No. 68, p. 51.)

In view of the large run-off of the combined basins of Donner and Cold Creeks and the comparatively low dam which would be required at all places except in the narrow gap above mentioned, it is believed that it will be perfectly feasible, and advisable from the point of view of power development, to increase the height of the dam 8 feet above that proposed by Mr. Taylor, making a total height of 46 feet above the lowest point in the stream bed and giving an estimated length, along the crest, of approximately 3,200 feet.

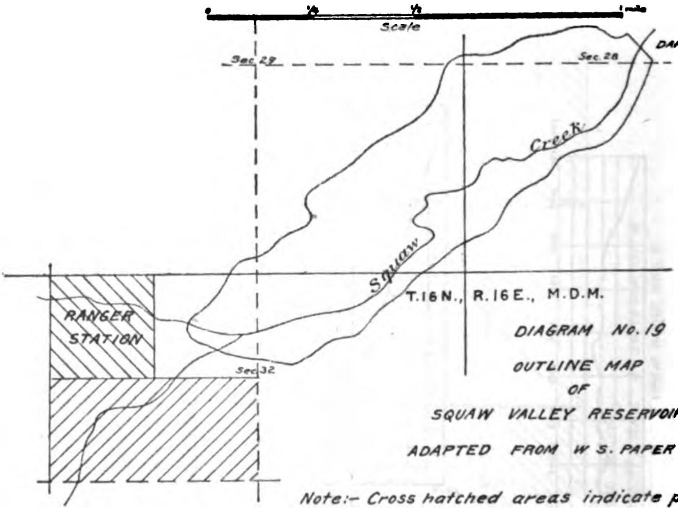


DIAGRAM No. 19
OUTLINE MAP
OF
SQUAW VALLEY RESERVOIR SITE
ADAPTED FROM W. S. PAPER No. 68, U.S.G.S.

Note:– Cross hatched areas indicate public land.

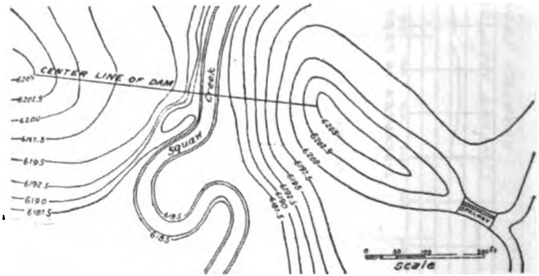


DIAGRAM No. 20
CONTOUR MAP
OF
SQUAW VALLEY RESERVOIR DAM SITE
FROM W. S. PAPER No. 68, U.S.G.S.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP. 20, 1909.

Area and storage capacity: The maximum area of water surface for this reservoir is estimated at 1,670 acres, of which only about 6 acres would be on public land.

Diagram No. 18, page 35, shows the approximate capacity of the proposed reservoir between the 6,095 and the 6,135 contour. For the purpose of this report the high-water level has been taken at contour 6,135, and the maximum storage capacity as 47,000 acre-feet.

Squaw Valley reservoir site.—Location: This site is located on Squaw Creek, a tributary entering the Truckee River about 6 miles below the outlet of Lake Tahoe. The site is situated in sections 28, 29, and 32, T. 16 N., R. 16 E., M. D. M.

Status of land: The NW. ¼ NW. ¼, S. ½ NW. ¼, SW. ¼ and SE. ¼ sec. 32, are public land, but it is doubtful if any of this would be flooded by the construction of a reservoir at this site. The NW. ¼ NW. ¼ sec. 32 is a Forest Service ranger station. The remainder of the land in section 32 and all of section 28 are "patented," and section 29 is "railroad selection approved."

Reclamation withdrawals: The following lands on the site were withdrawn by the Reclamation Service, "under first form," October 13, 1908:

T. 16 N., R. 16 E., M. D. M.: Sec. 28, NW. ¼, SW. ¼; sec. 29, NE. ¼, S. ½ SW. ¼, SE. ¼; sec. 32, NE. ¼, NW. ¼, N. ½ SW. ¼, N. ½ SE. ¼; sec. 33, NW. ¼.

Maps and diagrams: On page 36 is shown an outline map of the proposed reservoir site as given in Water Supply Paper No. 68, together with a contour map of dam site, also from the same source.

Area and storage capacity: The area of the reservoir surface, as shown on the map (Diagram No. 19, p. 36), is estimated as 56 acres, none of which is on public land.

Mr. Taylor, in Water Supply Paper No. 68, says of this site:

> The Squaw Valley site, although calling for but a nominal outlay for construction, will, by reason of its small capacity, involve too great an expense, relatively * * * to justify its inclusion in a general water-storage project.

The site has, however, been included in this report as possibly being of value in increasing the low-water flow of that portion of the Truckee River between the outlet of Lake Tahoe and Floriston to the extent shown on Diagram No. 31 appended to this report. The storage capacity for the area shown on the map is probably not more than 500 acre-feet.

Dog Valley reservoir site.—Location: This reservoir site is located in secs. 24 and 25, T. 20 N., R. 17 E. and in secs. 30 and 31, T. 20 N., R. 18 E., M. D. M.

> This reservoir site * * * occupies a small valley situated between outlying spurs of the Sierra Nevada just west of the boundary line between California and Nevada, and about 4 miles northwest of the town of Verdi, Nev. The elevation is about 5,700 feet above sea level. The cachment basin comprises 16 square miles, ranging in altitude from that of the reservoir to 8,500 feet, most of which is covered with pine and fir timber and is quite precipitous. This site was surveyed by the writer in 1895, topography of the lower portion of the valley being taken by means of transit and stadia and the contours plotted. (Water Supply Paper No. 68, p. 69.)

Status of land: All the lands included in this site and within T. 20 N., R. 17 E., M. D. M., are "patented." The status of the land on this site and within T. 20 N., R. 18 E., M. D. M., is unknown.

Reclamation withdrawals: On October 13, 1908, the Reclamation Service, "under first form," withdrew the following lands on this reservoir site:

T. 20 N., R. 17 E., M. D. M.: Sec. 24, S. ½ NE. ¼, S. ½ NW. ¼, SW. ¼, SE. ¼; sec. 25, NE. ¼, NW. ¼, N. ½ SW. ¼.

T. 20 N., R. 18 E., M. D. M.: Sec. 30, N. ½ NW. ¼, SW. ¼; sec. 31, NW. ¼.

Maps and diagrams: On page 38 is given a contour map of the proposed reservoir site, copied from a similar map in Water Supply Paper No. 68, as is also the profile of the dam site given in Diagram

No. 22, page 39. Diagram No. 23, page 39, gives the curve of capacities of the reservoir plotted from data contained in the above report.

Dam: A cross section of the outlet canyon immediately below the valley at what appeared to be the most favorable site for a dam was also measured, and it was found that by the construction of a dam to a maximum height of 65 feet with top length of 235 feet a reservoir having a surface area of 274 acres * * * would be created. (Water Supply Paper No. 68, p. 69.)

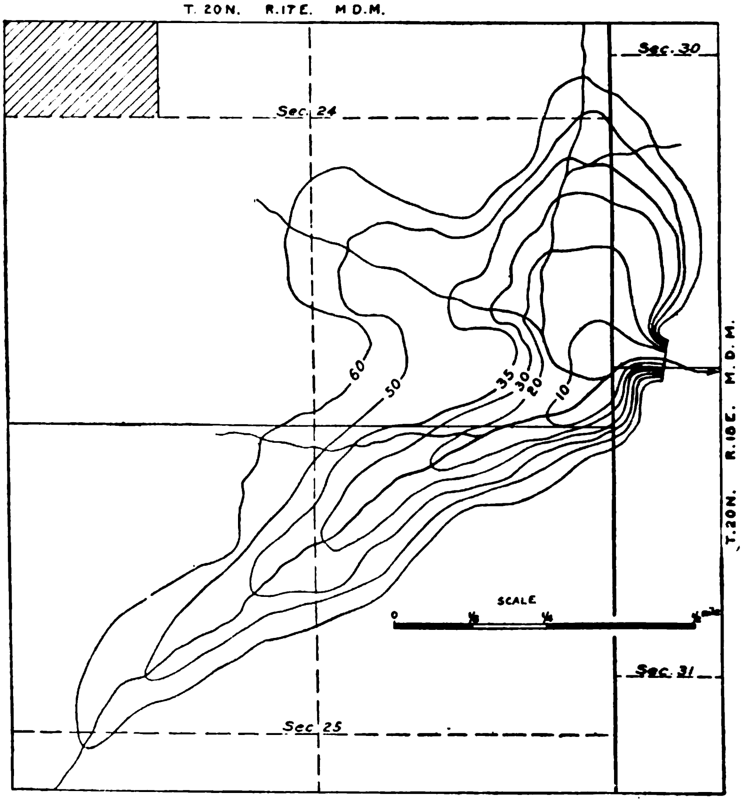


DIAGRAM No. 21
CONTOUR MAP
OF
DOG VALLEY RESERVOIR SITE
ADAPTED FROM MAP IN W.S. PAPER No. 68, U.S.G.S.

Note - Cross hatched area indicates public land.
Status of sec 30 and 31, T 20N., R.18E., M.D.M unknown
Contours represent elevation's above stream bed at dam site
Area at contour 60, 70 acres.

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909.

Area and storage capacity: As stated in the previous paragraph, the maximum area of water surface on this reservoir would be 274 acres, none of which would be on public land.

The above report gives the storage capacity of the reservoir with a 65-foot dam as 5,785 acre-feet. Diagram No. 23, page 39, shows that a comparatively slight increase in the height of the dam would make a large increase in the capacity of the dam. For the purpose of this report, however, the capacity has been taken at only 6,000 acre-feet.

Lake Tahoe Reservoir site.—Location: Lake Tahoe is located within the southern angle of the Truckee River watershed, about two-thirds of its area being in the State of California and the remaining one-third in the State of Nevada. Its maximum length is 21½ miles, its extreme width 12 miles, and its surface area 193 square miles. The tributary watershed, including its own area, is about 520 square miles. The lake lies mainly within townships 13, 14, 15, and 16 north and ranges 17 and 18 east, as shown on the status map appended to this report.

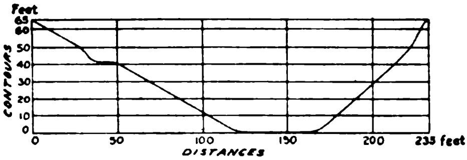


DIAGRAM No. 22

PROFILE OF DAM SITE, DOG VALLEY RESERVOIR

FROM W. S. PAPER No. 68 U.S.G.S.

Note:- Contours give elevations above creek bed of dam site.

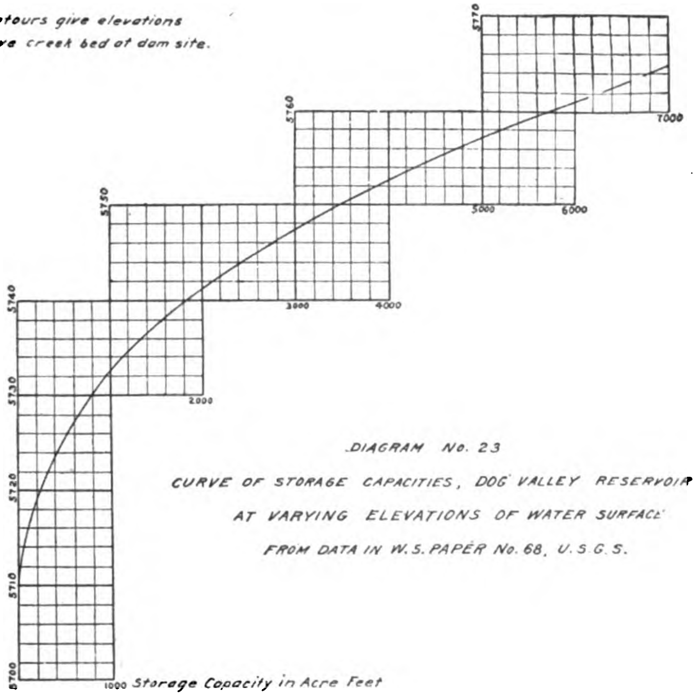


DIAGRAM No. 23

CURVE OF STORAGE CAPACITIES, DOG VALLEY RESERVOIR

AT VARYING ELEVATIONS OF WATER SURFACE

FROM DATA IN W. S. PAPER No. 68, U. S. G. S.

TO ACCOMPANY REPORT OF O. C. MERRILL TO THE FORESTER SEP 20 1909.

Status of land: Since all lands bordering upon the lake are reported to be in private ownership, with the exception of the small area near the outlet purchased by the United States Government from the Donner Lumber & Boom Co., it has not been considered necessary to show the status of all these lands, and hence a part only appear upon the general map.

Reclamation withdrawals: A telegram from Mr. Thomas H. Means, engineer of the Truckee-Carson reclamation project, in answer to an

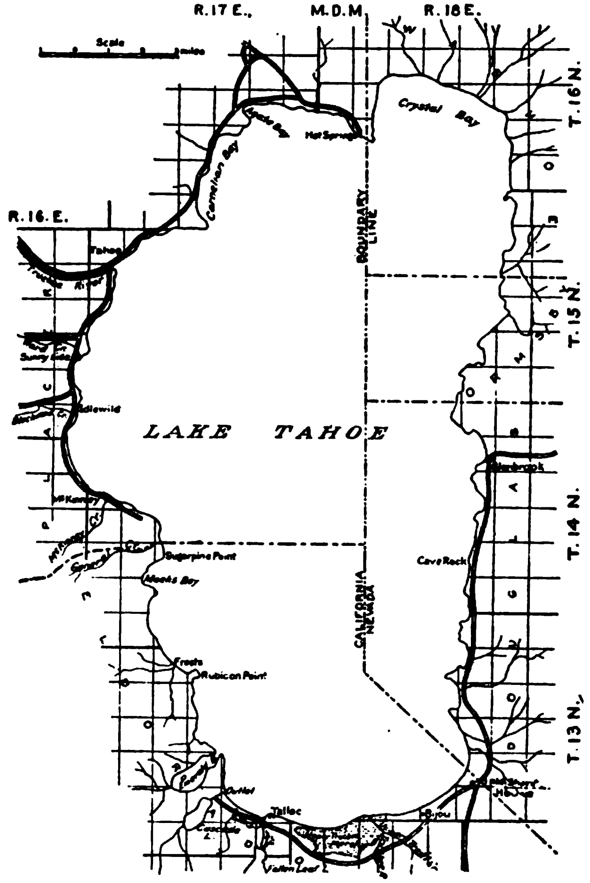


DIAGRAM No. 24.

OUTLINE MAP

OF

'LAKE TAHOE STORAGE RESERVOIR'

FROM W.S. PAPER No.68, U.S.G.S.

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909.

inquiry regarding the reclamation withdrawals on the Truckee River watershed, states that no withdrawals have been made around Lake Tahoe except a strip across the mountains east from the point where the State line leaves the south end of the lake. (Means, 7-29-09.) No more definite location of this area is known, but as far as the present report is concerned this withdrawal is not believed to affect the proposed Truckee River General Electric Co.-Reclamation Service agreement.

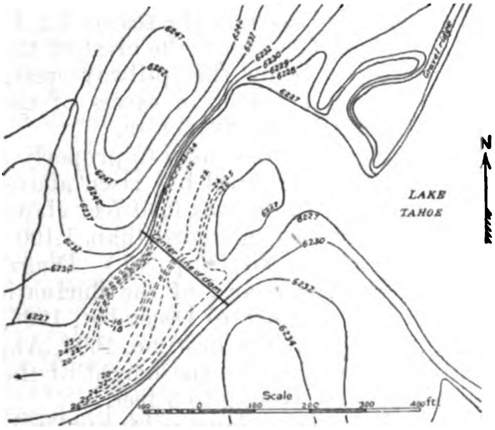
DIAGRAM No. 25

CONTOUR MAP

OF

LAKE TAHOE RESERVOIR DAM SITE

FROM W.S. PAPER No. 68, U.S.G.S.



Note:- Dotted contours are subaqueous.,

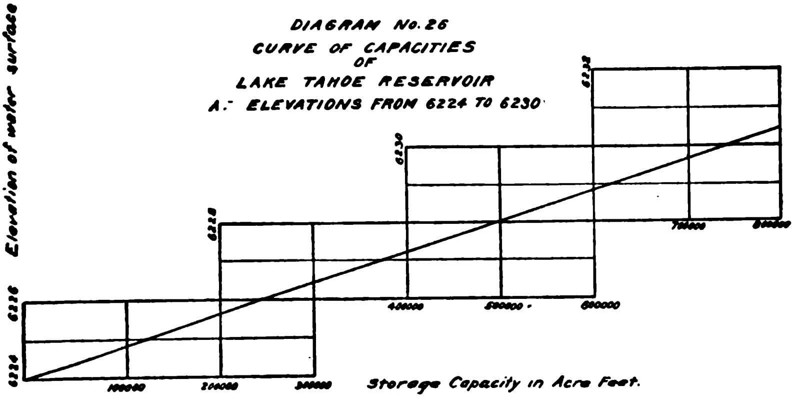


DIAGRAM NO. 26

CURVE OF CAPACITIES

OF

LAKE TAHOE RESERVOIR

A.- ELEVATIONS FROM 6224 TO 6230

TO ACCOMPANY. REPORT OF O.C. MERRILL TO THE FORESTER SEP. 20, 1909.

Maps and diagrams: On pages 40 and 41 are given an outline map of Lake Tahoe and a contour map of the dam site at the outlet, both copied from Water Supply Paper No. 68, United States Geological Survey; also a diagram of the storage capacity of the lake at elevations of water surface between 6,224 and 6,230.

Old dam: About the year 1870 the Donner Lumber & Boom Co., under authority of a special act of the State legislature approved April 4, 1870, (see p. 8), constructed a crib dam of timber and stone across the Truckee River about 500 feet from the shore of the lake. As stated previously in this report (see p. 9), it is unknown how long the dam was used for the purposes mentioned in the act, but it has been used continuously to date to regulate the flow from Lake Tahoe.

This dam had "three openings, with 10.7, 10.5, and 9.3 feet clear width, closed by timber gates * * *. The dam has also a wasteway of 72 feet clear length and 6 feet above the floor of the gates." (Water Supply Paper No. 68, p. 43.)

Fluctuations in lake level: Mr. Taylor states that at the time of his survey, July 19, 1889, the lake surface was 5.05 feet below the wasteway crest, and that the water fell later in the season 1.2 feet farther, making the minimum level 6.25 feet below the crest of the spillway. The floor of the gates are 6 feet below the spillway crest, hence the dam was constructed to a height 1 foot in excess of that allowed under the terms of the act granting the franchise.

The gates of the dam have proved too small to properly control the water, and at several times the lake level has risen above the spillway crest. On July 3, 1895, the water was 0.90 feet above the spillway, though the gates were delivering more than 1,100 cubic feet per second. (Water Supply Paper No. 68, p. 45.) Diagram No. 29 appended to this report gives the record of the fluctuations in the level of this lake from November, 1900, to December, 1908, inclusive. Three times during this period, namely in June, 1904, August, 1906, and June, 1907, the lake level rose above the height of the spillway, at the last-named date apparently from 2 to 3 feet.

To free themselves from liability to damage by sudden high water, which the gates would not have the capacity to pass, the company has often unnecessarily drawn down the lake level and occasionally to such a degree as to leave in storage an amount insufficient for the operation of their several power plants during the fall and winter months. The necessity for a new dam, with larger outlets more readily controlled, has, therefore, long been obvious.

New dam: At the present writing the company, under plans prepared by the Reclamation Service, is reconstructing their dam at the outlet, replacing the old wooden structure with a concrete dam having iron gates, similar to the dam and gates at the head of the Truckee-Carson Canal at Clarks Station. This dam presumably will be of such a height as to maintain the lake at the level of the old spillway, but the far greater percentage of gate opening will allow of discharging a much greater volume of water than the old dam could pass. The channel between the dam and the lake is to be dredged, the island shown on the map is to be removed, and probably the floor of the gates will be lowered. A rim of rock is said to extend across the outlet and to serve to fix the limit below which the lake level can not be drawn at the present outlet. No limit is placed, however, on the depth to which the lake can be drawn at the "second diversion."

Storage capacity: Diagram No. 26, page 41, shows that the gross storage capacity between the high and low water mark is 745,000 acre-feet. The "high-water mark" is assumed to be at elevation 6,230 (the elevation of the spillway of the old dam was 6,230.05) on the datum of Mr. Taylor's survey of July 19, 1889 (see Water Supply Paper No. 68, p. 45) and the "low-water mark," at elevation 6,224.

It is believed that if the gates are handled with reasonable foresight these limits are sufficient to make available the entire yield of the watershed for all except years of extremely high run-off. The storage capacity between the above levels is considerably in excess of the yield of the maximum year during the period of available records and more than twice the average yield for the same period. (See Table No. 6, p. 20.) Furthermore, any greater range in lake level would doubtless render the operator of the gates liable for damages for flooding private property if the level should go above the 6,230 contour; or for hindering navigation if the level should fall below the 6,224 contour.

Since the future yield of this watershed can be forecasted only on the assumption that conditions which have held in the past are likely to obtain in the future, any estimate of the future available storage from Lake Tahoe must be based on a study of the records of previous years such as has been presented in Table No. 6, page 20. This table shows the average annual yield of this watershed to have been 309,000 acre-feet for the period November, 1900, to December, 1908, inclusive. It is doubtful, however, if the yield of such a year as 1907, with a run-off not far from the total storage capacity of the lake, could be entirely utilized, particularly if such a year were preceded, as was 1907, by a year such as 1906, which had a run-off considerably in excess of the average. It is probable that the hold-over storage from the year 1906 would have left insufficient capacity in the lake, even with well-directed control, to have made it possible to have stored all the surplus waters of 1907. Diagram No. 29, appended to this report, shows that under the actual control exercised the lake level was above the high-water mark for the entire period of March 20 to October 20, 1907, and consequently during all this period water was wasted. How much this waste was in excess of the requirements may be seen by an examination of curve 6 on the above-named diagram. It is, therefore, probable that the amount of water available year by year under well-managed control would be more nearly represented by an average of the seven years, 1901, 1902, 1903, 1904, 1905, 1906, and 1908, namely, 260,000 acre-feet.

Lake Washoe storage reservoir site.—Location: This site is located in Tps. 16 and 17 N., Rs. 19 and 20 E., M. D. M., directly east of the northern limits of Lake Tahoe and 6½ miles distant from its eastern shore line. Washoe Lake occupies portions of secs. 1, 11, 12, 14, and 24, T. 16 N., R. 19 E., and of secs. 7, 17, 18, 19, and 20, T. 16 N., R. 20 E., M. D. M. Its normal area is about 3,500 acres, though this is largely increased in times of high water by the flooding of the marshes to the northward. It has no well-defined outlet, the water normally seeping through the marshes and finally leaving the valley as Steamboat Creek through a gorge at the northern extremity of the valley. The valley floor is very flat and would probably be completely flooded by a 20-foot rise in the level of the lake. The western side of the valley is devoted to stock and hay ranches, very little of the developed land requiring irrigation. The eastern side of the valley, which rises to a somewhat higher elevation, is covered with sage and requires irrigation for cultivation.

Status of land: A small amount of public land is still left in the valley, as the map on page 44 will show. The following areas within the 15-foot contour appear as public land on the Land Office plats, namely, S. ½ NE. ¼, and N. ½ SE. ¼, sec. 35, T. 17 N., R. 19 E. The areas in sec. 35, T. 17 N., R. 19 E., are designated as "State selection unapproved." All the remaining lands are either "patented" or "railroad selection approved."

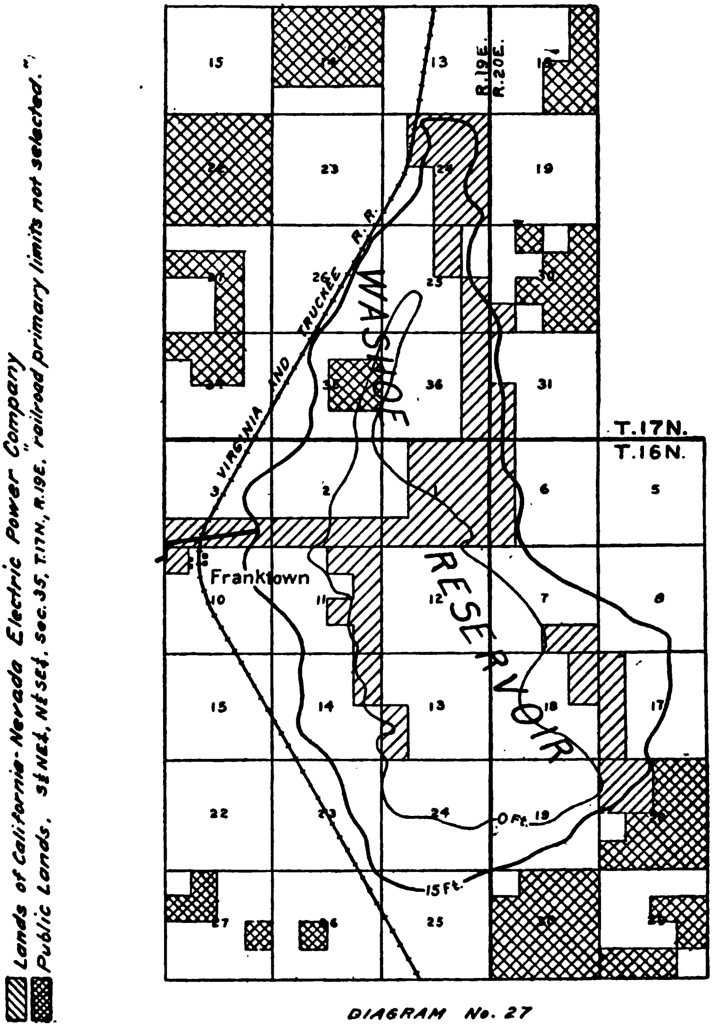

▨ Lands of California-Nevada Electric Power Company
▩ Public Lands. S½NE¼, N½SE¼, Sec. 35, T.17N., R.19E. "railroad primary limits not selected."
R.19E.
R.20E.
T.17N.
T.16N.
WASHOE
RESERVOIR
VIRGINIA AND TRUCKEE R.R.
Franktown
0 Ft.
15 Ft.
15
14
13
18
24
23
19
25
26
30
35
36
31
1
2
6
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DIAGRAM No. 27
CONTOUR MAP
OF
LAKE WASHOE RESERVOIR SITE
REDUCED FROM MAP BY U.S. RECLAMATION SERVICE.

TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER SEP., 20, 1909.

Reclamation withdrawals: No withdrawals have been made by the Reclamation Service in this valley, as far as is known.

Maps and diagrams: Diagram No. 27 presents a map of the proposed Lake Washoe Reservoir copied from a similar map prepared by the United States Reclamation Service and forwarded from Washington, together with several drafts of the "agreement." There is also presented below a capacity diagram of the reservoir, from the same source.

Dam: A concrete dam with regulation gates is built across Steamboat Creek just above the railroad bridge at the outlet of the valley.

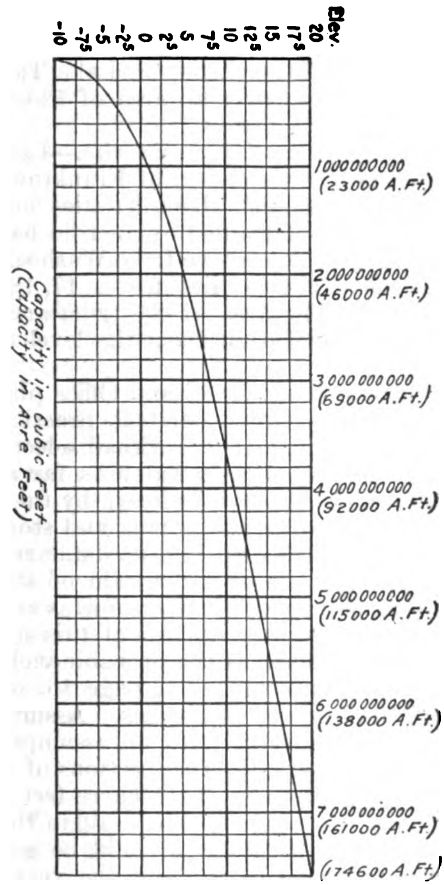

DIAGRAM No. 28
CURVE OF CAPACITIES
OF
LAKE WASHOE RESERVOIR
AT
VARYING ELEVATIONS OF WATER SURFACE
FROM DIAGRAM PREPARED BY U.S. RECLAMATION SERVICE.
TO ACCOMPANY REPORT OF O.C. MERRILL TO THE FORESTER, SEP. 20, 1909.

This is but a few feet in height and forms a small reservoir at the northern end of the valley whose waters, presumably, are used for irrigation in the Steamboat Valley below. A good site exists at this point for the construction of a dam of a height sufficient to cover practically the whole floor of the valley. No measurements were made to determine the probable length of the dam, but it would probably be about a hundred feet and could be constructed at moderate cost.

Area and storage capacity: The run-off of the Lake Washoe drainage basin serves only to maintain the level of the present lake and to supply the small overflow of Steamboat Creek. As a secondary storage reservoir, however, for the waters of Lake Tahoe drawn through the "second diversion," it could be developed, by raising the level 20 feet, to a total capacity of about 175,000 acre-feet. (See Diagram No. 28, p. 45.) A level 15 feet above the present lake surface giving a storage capacity of 125,000 acre-feet has been assumed for this report. The available capacity would, however, be considerably reduced by evaporation losses. The estimated area of the water surface if the water be raised 20 feet is about 12,500 acres. The estimated seasonable evaporation is 42 inches, entailing an annual loss in the reservoir, if the above level be maintained, of 43,700 acre-feet, and if the level be maintained at 15 feet above the present surface, a loss of 30,000 acre-feet. These evaporation losses will be in addition to the evaporation losses on Lake Tahoe, which are estimated at 32 inches in depth over an area of 123,500 acres, or an annual loss of about 330,000 acre-feet.

Little Valley Reservoir site.—Location: This reservoir site is located on the watershed of Franktown Creek, the main tributary of Lake Washoe, and about 3 miles northeast of Crystal Bay, Lake Tahoe. As determined by aneroid barometer readings the creek bed is about 1,400 feet above Lake Washoe, or at an estimated elevation of 6,430 feet. The site lies in secs. 17, 18, 19, and 20, T. 16 N., R. 19 E., M. D. M. The area of the tributary watershed is 14 square miles, varying in elevation from the level of the reservoir to about 9,000 feet.

Status of land: The Land Office plats show that the entire area of the reservoir site, as well as practically the entire watershed, are either "patented" or "railroad selection approved."

Reclamation withdrawals: As far as is known, no land upon this watershed has been withdrawn by the Reclamation Service.

Maps and diagrams—Area and storage capacity: No surveys have been made of this site and no data are at hand for the preparation of maps of the site or a diagram of storage capacities. The rainfall has been assumed to be the same as at Marlette Lake, but as only one year's records are available at this station, only the merest assumptions can be made of the probable yield of the watershed. Estimates based on Diagram No. 1, page 16, would show a probable average rainfall of about 40 inches. Assuming that 50 per cent of this reaches the reservoir site, an assumption that seems to be borne out by comparison with other sections of the watershed, the annual rainfall would amount to 15,000 acre-feet. The reservoir site is an excellent one. A dam could be built in the narrow gorge and with little doubt sufficient capacity could be secured to equalize the flow for power purposes throughout the year. The constant available flow for this reservoir has, therefore, been taken in the subsequent power estimates as 20 cubic feet per second.

Summary.—A summary of the data given in the preceding pages concerning height and length of dams, storage capacities and areas of reservoirs, and amount of public lands flooded at each site may be found in Table No. 13, page 58.

POSSIBLE WATER POWER DEVELOPMENTS.

The water-power estimates contained in the following pages are intended to show the possibilities of the watershed if developed to its full capacity for power purposes, regardless of any conflict between such purposes and the irrigation or other uses which are dependent upon the same water sources. Later a brief discussion will be given of the radical difference in the character of the utilization of the water resources of a drainage area if developed for power purposes than if developed for the purposes of irrigation. As stated hitherto in the discussion of reservoir sites, this report can not go into the detailed estimate of cost upon which alone the final conclusions could be reached as to the feasibility of any particular power development. It has been the purpose, however, to indicate a general scheme of development which, from the examination and studies made, would seem feasible of execution and which would be capable of effecting a complete utilization for power purposes of that portion of the Truckee River watershed above Clarks Station, Nev., regardless of whether such projects would be located within or without the Tahoe National Forest.

In the following pages will be given a brief outline of the several projects on which power estimates have been made. Estimates of the amount of water available have been taken from the studies on run-off and stream flow in the preceding pages which are summarized in diagram No. 31 appended to this report. Heads available have been taken from the contours of surveys when such were available, and when not, from carefully checked aneroid barometer readings taken upon the ground. Amounts of power as given are horsepower to generator shafts based on a water-wheel efficiency of 80 per cent. The amount of power actually available for use would be considerably less than the above, due to mechanical and electrical losses in the generation of the power and its transmission to the point of use. As will be seen from the power computations under the several projects in the following pages, the estimates are based on the complete utilization of a continuous flow of water, which would require either a load factor of 100 per cent for the power plants or the provision of adequate regulating reservoirs at the heads of the pressure pipes. In the absence of such reservoirs the actual amount of power developed would be nearly proportionate to the daily load factor. In this report "daily load factor" is taken to mean $\frac{\text{Average daily load} \times 100}{\text{Maximum daily load}}$

Project No. 1, Webber Creek power plant.—Power house: This power house will be located on Webber Creek and on the shore of Little Truckee Reservoir No. 1, in T. 19 N., R. 14 E., M. D. M., and on "patented" land.

Conduits: A conduit would start at the dam at Webber Lake Reservoir and extend down the south side of Webber Creek to the powerhouse. The total length would be about 1.75 miles, none of which would be situated on national forest land.

Transmission line: The transmission line has been assumed to follow the northern side of Little Truckee Reservoir No. 1 to a point on the Sierraville stage road, thence along this road to a junction with the Independence Creek power plant, comprising a total length of 8.75 miles, of which 1 mile will be on Government land.

Water and head available: The head has been estimated as about 200 feet and the continuous available flow as 42 cubic feet per second. (See diagram No. 31, attached.)

Power developed: The power developed at 80 per cent efficiency with the above water and head would be $42\times200\times\frac{1}{11}=760$ H. P.

Project No. 2, Lake Independence power plant.—Power house: This power house is to be located on the conduit line from Little Truckee Reservoir No. 1, to the Twin Valley power plant in sec. 32, T. 19 N., R. 16 E., M. D. M., and on "patented" land. The power water from this plant would be discharged in the above conduit and be used again at the Twin Valley power plant.

Conduit: The conduit is assumed to be a wood-stave pipe, extending along the slopes as shown on the general contour map atached, to the power house located as above. The conduit would be about 4 miles in length, of which about 0.25 mile would be on national forest land.

Transmission line: The transmission line for this project is assumed to connect with the line from the Webber Creek plant at a point on the Sierraville stage road and to follow thence along this road southerly to a junction with a line to Prosser Creek power house. Its length would be about 6.75 miles, none of which would be on national forest land.

Water and head available: Diagram No. 31 (attached) shows the total continuous available flow to be 27 cubic feet per second. The total available head has been estimated as 530 feet.

Power developed: On the above estimates of water and head, the amount of power developed at 80 per cent efficiency would be $27\times530\times\frac{1}{11}=1{,}300$ horsepower.

Project No. 3, Twin Valley power plant.—Power house: The power house for this plant would be located in sec. 24, T. 18 N., R. 15 E., M. D. M., on the shores of Twin Valley Reservoir and on patented land. Though a power house utilizing the water of Little Truckee Reservoir No. 1 could have been located on the Little Truckee River, admitting of a shorter conduit line and a greater head than here proposed, the water could not be further utilized after discharge from the plant. Under the proposed arrangements these waters are reused in the Prosser Creek plant and hence under the two developments utilize a much greater head than if the power house were located on the Little Truckee.

Conduit: The conduit for this power plant starts from the dam of the Little Truckee Reservoir No. 1 and extends around the slopes. as shown on the general map accompanying this report, taking up on the way the water discharged by the Lake Independence plant and carrying the combined waters to a power house on Twin Valley Reservoir. The length of the conduit would be about 12.75 miles. of which 0.75 mile would be on national forest land, and 0.25 mile on public land not within the forest.

Transmission line: The transmission line is assumed to follow the road along the North Fork of Prosser Creek to a point where the North Fork bends to the left, thence a long the conduit right of way of the Prosser Creek plant to the power house of the latter, a total distance of .about 5.5 miles, none of which would be on national forest land.

Water and head available: Diagram No. 31 (attached) shows the amount of water available from the Little Truckee Reservoir No. 1 as 157 cubic feet per second, to which is added the 27 cubic feet per second discharged from the Lake Independence plant, or a total of 164 cubic feet per second. The net available head is estimated to be 200 feet.

Power developed: The power developed at 80 per cent efficiency with the above water and head would be $164 \times 200 \times \frac{1}{11} = 3{,}000$ horsepower.

Project No. 4, Prosser Creek power plant.—Power house: The power house is assumed to be located in sec. 23, T. 18 N., R. 16 E., M. D. M., on the bank of Prosser Creek, about 1½ miles below Hobarts Mills and on "railroad" land.

Conduit: The conduit for this plant would start from the dam of the Twin Valley Reservoir at elevation 6,265 feet and extend thence along the slopes on the west side of the creek, taking up the waters discharged from the Euers Valley Reservoir, and passing thence as shown on the general map to the power house on Prosser Creek. The length along this location is about 6 miles, of which 0.25 mile is on national forest land.

Transmission line: A transmission line for this plant, carrying also the power from the Twin Valley plant, would extend about ½ mile to a junction with the line from Webber Creek and Lake Independence plants. The line carrying the combined power of all the above plants would extend thence down Prosser Creek to a junction with the lines along the Truckee River. The total length would be about 4 miles, of which 0.5 mile would be on national forest land.

Water and head available: Diagram No. 31 (attached) shows that 62 cubic feet per second could be made available from the watershed above the Twin Valley and the Euers Valley Dams, to which is to be added the 164 cubic feet per second discharged from the Twin Valley plant, making a total of 226 cubic feet per second. The net available head is estimated to be 550 feet.

Power developed: On the basis of the above estimated water and head the amount of power developed at 80 per cent efficiency would be $226 \times 550 \times \frac{1}{11} = 11{,}300$ H. P.

Project No. 5, Truckee power plant.—Power house: This power house would be located on the banks of Truckee River immediately below the highway bridge in the town of Truckee, and would be on private land.

Conduit: The conduit for this plant would start at the dam of the Donner Lake Reservoir and extend along the northern slopes of the Truckee Canyon, thence by tunnel, as shown on the general map, to a regulating reservoir on Trout Creek immediately behind the town of Truckee. From the regulating reservoir, which would serve to utilize a portion of the run-off of Trout Creek, a short conduit line and pressure pipe would conduct the water to the power house located as above. The total length of the conduit would be about 3 miles, of which 0.25 mile would be on national forest land.

Transmission line: The transmission line for this project would extend down the Truckee River, as shown on the map, meeting the transmission line from projects 1, 2, 3, and 4, and extending thence to Boca. The total distance is about 6.50 miles, of which about 1.25 miles would be on national forest land.

Water and head available: Diagram No. 31 (attached) shows the amount of water continuously available to be 89 cubic feet per second. The available head is 140 cubic feet.

Power developed: At 80 per cent efficiency of wheels the above amount of water under the above head would develop $89\times140\times\frac{1}{11}=$ 1,130 H. P.

Project No. 6, Boca power plant.—Power house: This project contemplates the development of lower Prosser Creek and of the Truckee River from Truckee to Boca by bringing the water in separate conduits and under different heads to a common power house situated on the north bank of the Truckee River at the town of Boca and upon private land.

Conduit: The Prosser Creek conduit would start at a diverting dam situated on Prosser Creek immediately below the outlet of Alder Creek. The conduit would extend thence along the left bank of Prosser Creek and of the Truckee River to Boca. The conduit for conveying the water of the Truckee River would start at a diverting dam located on the Truckee River immediately below the Truckee power house and would extend along the left bank of the river to the power house at Boca. The total length of conduit line in the two developments would be about 10.75 miles, of which about 2.75 miles would be on national forest land.

Transmission line: The transmission line for this plant would follow along the course of the Truckee River to the Floriston power house, a distance of about 5.25 miles, none of which would be on national forest land.

Water and head available: The water available from the regular flow of lower Prosser Creek is estimated to be 10 cubic feet per second, to which is added the amount discharged from the Prosser Creek power house, or 226 cubic feet per second, making a total available of 236 cubic feet per second. The amount available from the flow of the main Truckee River at the diversion dam at Truckee (see Diagram No. 31, attached) is estimated to be 30 cubic feet per second. This, added to the amount discharged from the Truckee River plant, gives a total of 119 cubic feet per second. The estimated heads are for the Prosser Creek conduit 325 feet, for the Truckee River conduit 225 feet.

Power developed: On the basis of the above water and head the power that could be developed at 80 per cent efficiency would be, Prosser Creek, $236\times325\times\frac{1}{11}=7{,}000$ H. P.; Truckee River, $119\times225\times\frac{1}{11}=2{,}400$ H. P.; total, 9,400 H. P.

Project No. 7, Floriston power plant.—Power house: It is proposed to locate this power plant at or near Floriston to supersede the present plant located at that point. This power house would be placed on the north bank of the Truckee River and on public land not included within the national forest.

Conduit: This conduit would extend from a diverting dam immediately below the Boca plant, a distance of about 4.25 miles to Floriston, of which distance about 0.25 mile would be on public land not within the national forest.

Transmission line: This would extend from the power plant along the general course of the river to the city of Reno and would probably be strung on the present pole lines of the company. The total distance from Floriston to Reno is about 20 miles, of which about 1.75 miles, in T. 18 N., R. 18 E., M. D. M., are on national forest land, and about 0.5 mile in the same township on public land not within the national forest. The status of the lands in the remaining 15 miles to Reno is unknown.

Water and head available: The water available for this plant would be made up of the discharge of the Boca plant, 355 cubic feet per second, plus the 27 cubic feet per second, estimated as the available discharge of the lower Little Truckee River (see Diagram No. 31, attached) or a total of 402 cubic feet per second. The net head is estimated as 235 feet.

Power developed: The amount of power developed with the above water and head would be, at 80 per cent efficiency, $402 \times 235 \times \frac{1}{11} = 8{,}600$ H. P.

Project No. 8, Lake Washoe power plant.—This project contemplates the utilization of the waters of Lake Tahoe through the "second diversion," as provided for in the Truckee River General Electric Co.-Reclamation Service agreement.

In connection with the development of the waters of Lake Tahoe it is proposed to develop also the run-off of the Little Valley watershed, installing the generating machinery in the same power house, but with the remaining part of the development distinct.

Power house: The proposed power house would be located on the shores of Lake Washoe reservoir and on the private holdings of the California-Nevada Power Co.

Conduit: The proposed conduit would consist of about 4 miles of tunnel and 0.50 mile of pipe, or a total of 4.50 miles all on or through "patented" land. The Little Valley conduit would consist of a pipe line from the Little Valley reservoir to the same power house, having a length of about 1.75 miles, all of which would be on patented land.

Transmission line: The transmission line for this plant has been assumed to pass along the western shore of the Lake Washoe reservoir, thence down the valley of Steamboat Creek to Reno, as shown on the general map accompanying this report. The total distance is about 22 miles, of which about 1.25 miles would be on public land not within the national forest.

Water and head available: With a storage capacity at Lake Tahoe of more than double the average annual yield of the watershed, and with no limit fixed in the agreement as to the depth at which the tunnel may be constructed, it is believed that, if developed solely for power, the entire run-off of the watershed might be made available. The average run-off for eight years (see table No. 7, p. 20) has been 423 second-feet. Power estimates will be made on the assumed continuous use of 420 cubic feet per second under a head of 1,150 feet. The water available from Little Valley reservoir is estimated to be 20 cubic feet per second, and the net head 1,400 feet.

Power developed: With 80 per cent efficiency of the wheels 420 cubic feet of water per second under a head of 1,150 feet will develop $420 \times 1{,}150 \times \frac{1}{11} = 43{,}900$ H. P. Similarly the power developed from the Little Valley reservoir would be $20 \times 1,400 \times \frac{1}{11} = 2,540$ H. P. Total power developed, 46,440 H. P.

Since both conduit lines will doubtless be under pressure through the whole length, no water need be wasted, and hence no deductions need be made on account of the daily-load factor of the plant.

Project No. 9, Steamboat Valley power plant.—Power house: This power house has been assumed to be located on Steamboat Creek, at the mouth of the canyon below Lake Washoe. The probable location would be on sec. 4, T. 17 N., R. 20 E., M. D. M., and on "patented" land.

Conduit: The conduit for this plant would start at the impounding dam of the Lake Washoe reservoir and extend by tunnel and canal a distance of about 4 miles to a point above the proposed power-house location. Of this distance, about 1.25 miles would be on public land not within the national forest.

Transmission line: The power from this plant would be transmitted over the line of the Lake Washoe plant.

Water and head available: The amount of water discharged from the Lake Washoe plant, namely, 440 cubic feet per second, must be reduced by the amount of the loss by evaporation in Lake Washoe, estimated to average about 38,000 acre-feet per annum, or an equivalent of 52 cubic feet per second, leaving 388 cubic feet per second for the Steamboat Valley plant. The net available head is estimated at 500 feet.

Power developed: The power developed at 80 per cent efficiency would be $388 \times 500 \times \frac{1}{11} = 17,650$ H. P.

Project No. 10, Clarks Station power plant.—Power house: This would be located on the north side of the Truckee River, in the vicinity of Clarks Station, so that the discharged water could be taken into the Truckee-Carson Canal for irigation purposes.

The status of the site is unknown. It is probably "patented" and is not on national forest land.

Conduit: It is assumed that all the water utilized in the several projects outlined above would be diverted at a point near Vista, Nev., and conducted in a canal to the power house at Clarks Station. The length of this canal would be about 11 miles. The status of this land is unknown, but none is within the national forest.

Transmission line: The transmission line from this plant would extend up the Truckee River to meet at Reno the transmission lines from the upper Truckee and from the Steamboat Valley. This line would be about 18 miles in length. The status of the land is unknown, but none is within the national forest.

Water and head available: The water available for this plant would consist of the 402 cubic feet per second discharged from the Floriston plant, plus the 388 cubic feet per second discharged from the Steamboat Valley plant, or 790 cubic feet per second. From this has been deducted an estimated amount of 50 cubic feet per second for irrigation purposes in the Reno Valley and 20 cubic feet per second for irigation in the Steamboat Valley, leaving a total available of 720 cubic feet per second. The net head is estimated as 200 feet.

Power developed: At 80 per cent efficiency, the power developed would be $720 \times 200 \times \frac{1}{11} = 13,100$ H. P.

Summary.—Table No. 14, page 59, gives a summary of the water and heads available, the length of the conduits and transmission lines, the amounts of power developed at each of the projects outlined above, and the length of conduits and transmission lines on lands included within the Tahoe National Forest.

WATER POWER V. IRRIGATION.

An examination of diagram No. 31, appended to this report will show at a glance the essential conflict that exists between water-power interests and irrigation interests operating upon the same watershed. All the endeavors of the former are devoted toward the transformation of the irregular, natural flow of streams into a uniform, continuous flow throughout the entire year; of the latter toward the concentration of the entire annual run-off into the few months of the irrigation season. When the irrigation season coincides with the period of natural low flow in the streams, it is true that storage for power purposes, by increasing the low-water flow, increases also the amounts available for irrigation above what could be secured if no storage for any purposes were made. But the amount thus made available for irrigation is far less than if storage were developed primarily for irrigation purposes.

Table No. 8.—*Average quantities of water (acre-feet) that could have been drawn annually from storage for power purposes from certain reservoirs on the watershed of the Truckee River during the period 1900–1906, inclusive, and the average annual amount available for irrigation prior to September 1*[1] *of each year.*

Reservoirs.	Estimated total capacity.	Used before Sept. 1.[2]	Used after Sept. 1.[2]	Total annual use.	$\frac{\text{Col. 2}}{\text{Col. 3}}$	$\frac{\text{Col. 3}}{\text{Col. 4}}$	$\frac{\text{Col. 4}}{\text{Col. 5}}$	$\frac{\text{Col. 2}}{\text{Col. 1}}$
Webber	20,000	2,800	9,680	12,480	0.22	0.78	0.62	0.14
Little Truckee No. 1	60,000	10,700	32,000	42,700	.25	.75	.71	.18
Henness Pass	20,000	2,760	5,120	7,880	.35	.65	.39	.14
Lake Independence	15,000	2,050	6,960	9,010	.23	.77	.60	.14
Twin and Euer Valleys	32,000	4,230	14,400	18,630	.23	.77	.58	.13
Donner Lake	47,000	7,840	21,000	28,840	.27	.73	.61	.17
Total	194,000	30,380	89,160	119,540	.25	.75	.62	.155

[1] End of the main irrigation season in Nevada.

[2] From diagram No. 31 appended to this report.

Through the storage curves of diagram No. 31 a vertical line has been drawn marking the end of the main irrigation season in Nevada. A comparison of the storage areas on either side of this line on the several curves will show how large a percentage of the stored waters would have been required for power purposes during the period covered by the curves. From this diagram Table No. 8 has been prepared, showing the average annual amount that would have been used from storage from the several reservoirs during the seven years, 1900–1906, inclusive, had these reservoirs been used for power purposes during the period, had the run-off been as estimated, and had the storage been developed as assumed. This table shows that during this period 62 per cent of the total capacity of the reservoirs would have been utilized, on the average, and that of this amount 25 per cent only, or 15½ per cent of the total storage capacity of the reservoir would have been available for irrigation uses prior to September 1 of the several years. The remaining amounts would have been discharged during the months in which the water could not have been used for irrigation.

Diagram No. 29 (attached), copied from a similar diagram prepared in the office of the United States Reclamation Service at Fallon, Nev., shows the amount of water that could have been used for irrigation from Lake Tahoe during the period November, 1900, to December, 1908, inclusive, if the gates had been operated by the Reclamation Service. This diagram shows that during two periods, namely, October, 1902, to January, 1903, inclusive, and September 15, 1903, to January 15, 1904, inclusive, there would have been a deficiency in the assumed requirements, in the former period of 90,000 acre-feet and in the latter period of 95,000 acre-feet. These amounts could have been supplied by drawing down the level of the lake. At all times since February 15, 1904, however, the assumed requirements could have been met from the natural yield of the watershed. Table No. 9, computed from diagram No. 29, gives the amounts of water that would have been used for irrigation purposes from Lake Tahoe during the period November, 1900, to December, 1908, had the requirements been as shown on the diagram and had the reservoir been subject to the control of the Reclamation Service.

TABLE No. 9.—*Irrigation and power requirement from Lake Tahoe storage and quantity that would have been available for use on Truckee-Carson project during the years 1900–1908, inclusive, in acre-feet.*

Year ending December 31—	Total requirement.[1]	Deficiency.[2, 3]	Requirement other than reclamation.[2]	Utilizable, Truckee-Carson project.
1901	205,000	....	40,000	165,000
1902	285,000	90,000	75,000	210,000
1903	255,000	95,000	65,000	190,000
1904	2,050,000	....	45,000	160,000
1905	315,000	....	75,000	240,000
1906	200,000	....	75,000	125,000
1907	80,000	....	35,000	45,000
1908	380,000	....	85,000	295,000
Averages	241,000	23,000	62,000	179,000

[1] From curve No. 4, diagram No. 29, attached.

[2] From curve No. 5, diagram No. 29, being the amount required to supply 40,000 acres in Reno Valley, irrigation requirements below Truckee Dam, and to maintain required flow at power plants.

[3] Excess of assumed requirements over estimated yield. Supplied by drawing down the level of the lake.

The first column of Table No. 9 gives the estimated amounts that, in addition to the natural flow of that portion of the Truckee River watershed between Tahoe and Clarks Station, it would have been necessary to draw from Lake Tahoe storage in order to provide for "vested rights along the Truckee River and to maintain a full flow in the lower Truckee Canal during the irrigation season (1,200 cubic feet per second) except for months in which the irrigation requirements for 150,000 acres below Carson Dam and 15,000 acres under the Truckee Canal, plus seepage losses, would be less than the full capacity of the canal." This average annual requirement is shown to be 241,000 acre-feet.

The second column shows the amount of the deficiency in supply for the two years 1902 to 1903, amounts which could have been secured by lowering the level of the lake.

The third column shows the annual "storage requirements from Lake Tahoe to supply 40,000 acres in Reno Valley, irrigation requirements below Truckee Dam to Pyramid Lake, and to maintain a flow at Mystic at California-Nevada State line for power purposes of 500 second-feet from March 1 to October 1, and 400 second-feet from October 1 to March 1," an average of 62,000 acre-feet per annum.

The last column shows the amounts drawn from Lake Tahoe storage that would have been used for irrigation purposes on the Truckee-Carson project, an average of 179,000 acre-feet per annum.

Curve No. 6 on diagram No. 29 (attached) shows the massed surplus of the yield of Lake Tahoe watershed above the requirements during the period. This curve shows that to have maintained the requirements as there given would have required a maximum storage capacity of 530,000 acre-feet, equivalent to a net depth of 4.25 feet on the lake. In view of the fact that the storage capacity of the lake is 745,000 acre-feet, and that a large amount of water would have been wasted in the later years of this period, it is probable that the amount available for irrigation uses could be increased above the 179,000 acre-feet as given in the table, probably up to an average annual use of 200,000 acre-feet.

Table No. 10 gives the run-off of the Truckee River at Vista, Nev., the gauging station at the entrance to the canyon above Clarks Station for the irrigation period April to August, inclusive, for the years 1900 to 1906, inclusive. These figures show the amounts that have been available for irrigation uses under the present control of the lake outlet during the several years.

TABLE No. 10.—*Mean monthly run-off of Truckee River at gauging station, Vista, Nev., during the irrigation season, Apr. 1–Aug. 31, inclusive, for the years 1900–1906, inclusive, in cubic feet per second.*

	1900	1901	1902	1903	1904	1905	1906
April	756	1,380	1,922	1,537	4,172	1,003	2,910
May	1,257	2,145	1,610	1,852	4,924	1,279	3,870
June	709	1,263	1,056	1,020	3,174	930	3,400
July	110	425	292	259	1,313	260	2,170
August	122	315	311	192	771	224	729
Mean	590	1,106	1,038	990	2,871	739	2,616

Table No. 11 shows the amounts that could have been used providing the canal was kept at its full capacity (1,200 (?) second-feet) whenever such an amount, plus 50 second-feet, assumed to be needed for irrigation requirements below Clarks Station, was flowing in the river. Since, however, the requirements for irrigation during a portion of the season are not as much as the full canal capacity, these figures doubtless represent more than could have actually been utilized.

TABLE No. 11.—*Maximum monthly run-off available for Truckee-Carson reclamation project assuming capacity of canal as 1,200 cubic feet per second and allowing 50 cubic feet per second for irrigation purpose below Clarks Station.*

	1900	1901	1902	1903	1904	1905	1906	Mean.	Acre-feet.
April	706	1,200	1,200	1,200	1,200	953	1,200	1,094	65,000
May	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	73,800
June	659	1,200	1,006	970	1,200	880	1,200	1,016	60,500
July	60	375	242	209	1,200	210	1,200	513	31,500
August	72	365	261	142	721	174	679	345	21,200
Mean	539	868	782	744	1,104	683	1,096	834	[1] 252,000

[1] This amount could be entirely utilized only on the assumption that the irrigation requirements are never less during any month than the full capacity of the canal.

The latest of the proposed agreements between the Truckee River General Electric Co. and the Reclamation Service, in paragraph 5, provides that in event of the construction of the "second diversion" "a sufficient quantity of water shall, by storage or other means to be provided by the company, be delivered to the Truckee River at or above the place of diversion for said Truckee-Carson project near Clarks Station in such manner that the 'second diversion' shall not have the effect of diminishing the quantity of water flowing in said Truckee River near Clarks Station and which would be available for the use of the said Truckee-Carson project in case no such 'second diversion' for power purposes from Lake Tahoe were provided."

The effect that the "second diversion" will have upon the irrigation interests will depend in the main upon the interpretation placed on the above paragraph; that is, whether the flow which the company guarantees to maintain at Clarks Station would be that which had been available for irrigation immediately before the construction of the "second diversion" or whether it would be that which had been available up to the time of the signing of the contract. However this be interpreted, it is evident that under the terms of the contract the company could, if it so desired, develop all the available reservoir sites on Donner and Prosser Creeks and Little Truckee River and that of the waters stored therein but a small proportion would be available for irrigation compared with what could be made available were these sites developed by the United States Reclamation Service primarily for the use and benefit of the Truckee-Carson project.

OPPORTUNITY FOR AND POSSIBILITY OF MONOPOLY.

The terms of the proposed agreement granting to the Truckee River General Electric Co. the right to file on any and all reservoir and power sites within the watershed of the Truckee River obviously, as far as any governmental sanction is necessary, would permit that company to acquire a complete monopoly of the power resources of this watershed. Several of the possible projects outlined in this report, since no Government land is involved, could possibly be acquired by other and competing interests. Actually, however, such a possibility is very remote. The Truckee River General Electric Co. and allied interests control the power market of eastern California and of Nevada, as well as practically all the sources of power. No better statement of the situation can be made than is contained in the following extract from the Electrical World of July 29, 1909, under the caption "Hydroelectric developments in California":

> Another important development deal consists of the formation of a large water and power consolidation in the Sierras, which is to be incorporated under the name of the Lake Tahoe Power & Water Co., and in the development of which it is proposed to expend not less than $1,000,000 annually for the next four years. W. P. Hammon, the wealthy mining operator, and a syndicate of English capitalists and New York and Boston bankers are back of the project. It is stated that they recently paid $3,000,000 to close the deal. The principal purpose of the syndicate is the development of power from the water of Lake Tahoe, of which it controls the only outlet. Transmission lines will be run on both sides of the mountains, supplying energy to the entire State of Nevada as far east as Ely and on the California side to Sacramento and through the valley of the Sacramento River.
>
> At the same time it is announced that Mr. Hammon has reached an agreement with the United States Government whereby all of the suits in which the Interior Department had made him a defendant in the Federal courts in seeking to protect the Truckee-Carson irrigation project from the encroachment of Ham-

mon on the waters of Lake Tahoe have been dismissed. The entire output of the plants now combined, together with that which will be constructed near Lake Tahoe, will be developed to 200,000 horsepower. The concerns which have been consolidated by the Hammon syndicate are the Truckee River General Electric Co., the control of which Hammon recently purchased from the Fleischackers; the California-Nevada Electric Power Co., which had been controlled by F. G. Baum and Francis V. Keesling, agents of Hammon; and the Loon Lake Water & Power Co., which has been in the hands of Chickering & Gregory.

It is stated that the Government has agreed, through the Secretary of the Interior, to a joint control of the outlet of Lake Tahoe, so that the Truckee-Carson irrigation project and the power development by the new corporation will be carried out under an agreement by which Hammon will secure the right to use the water under certain regulations by the Government which it is considered will protect the interests of the Federal irrigation project in Nevada.

One of the first parts of the construction work to be undertaken will be the long transmission line to Ely, Nev., where the Hammon corporation is to furnish energy to the smelters. This will not only be one of the longest transmission lines, but it will also carry a load of 10,000-horsepower.

In addition to furnishing energy to Reno and Sparks, the new corporation, through the California-Nevada Co., is supplying electricity to the mines at Tonopah and Goldfield, and has the control of the market in the entire State. This, together with the transmission line in the Sacramento Valley, will give the company a field from the eastern border of Nevada to Sacramento.

The greatest part of the energy sold in Nevada will be developed from the Carson and Walker Rivers, while the engineers have plans for new power stations on the Truckee, where three stations are already in operation.

The engineering work of all the Hammon plants is in the hands of Frank G. Baum, formerly engineer for the California Gas & Electric Corporation. Mr. Baum has already increased the output of the Truckee River plants by 1,000 horsepower, through changes in the engineering features of the system.

GENERAL SUMMARY.

Location of area involved.—The proposed Truckee General Electric Co.-Reclamation Service agreement involves all of the watershed of the Truckee River above Clarks Station, Nev., an area of about 1,520 square miles. Of this area practically every alternate section is railroad land, of the remainder many sections are patented and hence comparatively little national forest land is involved. The actual amounts appear in Tables Nos. 13, and 14, pages 58 and 59. (See also p. 7).

Origin of the right of the Truckee River General Electric Co. and negotiations with the Reclamation Service.—The power rights on the Truckee River originated in a special act of the California Legislature, approved April 4, 1870, granting to the Donner Lumber & Boom Co. a 20-year franchise for the construction and operation of dams and flood gates on the Truckee River between the outlet of Lake Tahoe and the town of Truckee. After the date of the expiration of the franchise, 1895, the Donner Lumber & Boom Co. appear to have continued to exercise the right by prescription. In the meantime several power plants had been constructed on the river below the town of Truckee and a conflict of interests between the power companies and the Donner Lumber & Boom Co., having arisen, one of the former, the Fleischackers, purchased the land at the outlet of Lake Tahoe and the right to control and operate the gates. The Fleischackers, after having consolidated under one ownership all the power plants on the river, attempted to conclude an agreement with the Department of the Interior, through the Reclamation Service, looking to the control of the flood waters of the lake. While these negotiations were pending the rights and property of the

Fleischackers were purchased by the Hammon syndicate and through the agency of the latter the form of agreement of May, 1909, has been presented for execution. (For details see pp. 9 to 11 and 130 to 141.)

TABLE No. 12.—*Present power developments on the Truckee River.*

Name.	Location of development.	Diversion[1] capacity, cubic feet per second.	Head.[1]	Power capacity, horse-power.
Floriston Pulp & Paper Co.[2]	Floriston	400	56	1,500
Truckee River General Electric Co.[2]	Faraday	400	85	[3] 2,300
Truckee River General Electric Co.[2]	Fleischackers	300	126	[3] 3,100
Washoe Power & Development Co.[2]	Mogul	300	88	2,000
Reno Power, Light & Water Co.[2]	Reno	250	41	[3] 940
Total capacity				9,840
Other power developments (approximate)				900
				10,740

[1] From "Indenture" dated Oct. 15, 1908. (See Appendix.)
[2] Under control of Truckee River General Electric Co.
[3] Horsepower capacity of installed machinery. (Eng. Rec., July 17, 1909.)

Present power developments.—Table No. 12 gives a summary of the data concerning the five power plants now operating on the Truckee River under the ownership of the Truckee River General Electric Co. This information is given in detail, together with descriptions of the power plants on pages 11 to 13 preceding.

Precipitation, run-off, and stream flow.—On pages 14 and 15 have been given tables of precipitation at several stations on the watershed and a discussion of the relation of elevation to precipitation. This data has been used in the succeeding estimates of run-off and stream flow (pp. 15–20) which have in turn been made the basis of the estimates of the amount of water available for the development of power. The run-off and stream-flow data as summarized in Table No. 15 and diagram No. 31 appended to this report.

TABLE No. 13.—*Area*[1] *and storage capacity of reservoirs, dimensions of dams, and land flooded for certain possible reservoir sites on the watershed of the Truckee River in California and Nevada.*

Reservoir.	Maximum storage capacity.[2]	Maximum area of water surface.[2]	Area of land flooded.[2]	Public land flooded.[2]	Public land, total flooded.	Maximum height of dam.	Maximum length of dam.
	Acre-feet.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Feet.*	*Feet.*
Webber Lake	20,000	1,125	893	11	0.012	40	1.800
Little Truckee No. 1	60,000	1,095	1,095	102	.093	110	640
Heness Pass	17,000	590	590			56	720
Lake Independence	15,000	995	335	[3] 75	.224	30	960
Twin Valley	27,000	475	475	30	.063	78	1,000
Euers Valley	2,000	[4] 100	100			[4] 50	[4] 500
Donner Lake	47,000	1,670	865	[5] 6	.007	46	3,200
Squaw Valley	500	56	56			20	500
Dog Valley	6.000	280	280			66	240
Lake Tahoe	745,000	123,500	1,358			6	100
Lake Washoe	[6] 125,000	8,500	5,000			20	[4] 100
Little Valley	[4] 2,000	[4] 120	120			[4] 40	[4] 200
Total	1,066,500	138,506	11,167	224	.020		

[1] Areas approximate only, being measured by planimeter from the maps contained in this report.
[2] At the maximum high-water levels assumed in this report.
[3] Thirty-five acres of this are "State selection unapproved."
[4] Assumed.
[5] All of this area is "State selection unapproved."
[6] At elevation "15 feet" as shown on diagram No. 27, p. 44.

Reservoir sites.—On pages 20 to 46 has been given a detailed description of the several reservoir sites upon this watershed, including location, status of land, reclamation withdrawals, dams, areas, and storage capacity. The greater part of this information is summarized in table No. 13, page 58. While it had not been possible with the time and data at hand to make such studies of these sites, especially cost estimates, as could lead to final conclusion concerning the practicability of the development of all herein described, yet it is believed that these sites are sufficiently favorable to warrant their inclusion in this report.

Possible power developments.—It has been the intention in making an estimate of the power possibilities of this watershed to lay out a general scheme of development that, from the data at hand, would seem feasible of construction and at the same time would include all the sites that would probably be utilized. As stated above, in relation to reservoir sites no attempt has been made to reach final conclusions as to the feasibility of any particular project outlined, since neither the time nor the data are available for making the detailed cost estimates upon which alone such conclusions could be based. Descriptions have been given of 10 possible projects on pages 47 to 53, and the essential data concerning them has been summarized in Table No. 14.

TABLE No. 14.—*Summary of data of certain possible power plants on watershed of Truckee River.*

No. of project.	Location.	Volume water utilized.	Net head.	Horse-power at 80 per cent efficiency.	Length conduits.	Miles conduit on National Forest.	Length transmission lines.	Miles transmission lines on National Forest.
		Sec.-ft.	*Feet.*		*Miles.*		*Miles.*	
1	Webber Creek	42	200	760	1.75	....	8.75	1.00
2	Lake Independence	27	530	1,300	4.00	0.25	6.75	....
3	Twin Valley	164	200	3,000	12.75	[1] .75	5.50	....
4	Prosser Creek	226	550	11,300	6.00	.25	4.00	.50
5	Truckee	[2] 89	140	1,130	3.00	.25	6.50	1.25
6	Boca	236	325	7,000	3.50	1.00	....	....
		[3] 119	225	2,400	7.25	1.75	5.25	....
7	Floriston	402	235	8,600	4.25	(1)	20.00	[4] 1.75
8	Lake Washoe	420	1,150	43,900	4.50	....	22.00	(3)
		20	1,400	2,540	1.75	....	....	....
9	Steamboat Valley	388	500	17,650	4.00	(6)	....	....
10	Clark's Station	720	200	13,100	11.00	....	18.00	....
	Total	....	....	112,680	63.75	4.25	96.75	4.50

[1] 0.25 mile additional on public land not included in the Tahoe National Forest.

[2] Prosser Creek development.

[3] Truckee River development.

[4] 0.50 mile additional in T. 18 N., R. 18 E., M. D. M., on public land not within the national forest. Status of the last 15 miles to Reno is unknown.

[6] 1.25 miles on public land not within the national forest.

Effect on irrigation project.—It has not been the intention to give in any detail the probable effect on the irrigation interests of the Truckee-Carson project of the proposed agreement. The Reclamation Service engineers estimated that the control of the present outlet of Lake Tahoe and the construction of a new dam would enable them to secure from storage therein 200,000 acre-feet during each irrigation season. That this could be done under the terms of the contract of October 15, 1908, seems very reasonable. That it could be done under the possible interpretation of that paragraph of the agreement of May, 1909, relating to the quantity of water to be guaranteed at Clarks Station, admits of considerable doubt. There is no doubt, however, that a grant to the company of the right to construct reservoirs on the watersheds of Donner and Prosser Creeks and of the Little Truckee River would deprive the Truckee-Carson project forever of 75 per cent of the water that might be made available, were these sites developed by the Reclamation Service for the sole use and benefit of the reclamation project, unless the Reclamation Service shall construct, lower down on the streams, hold-over storage reservoirs of an equivalent capacity.

Intercorporate relations.—The Truckee River General Electric Co. is associated in its power development schemes with the California-Nevada Power Co., which operate from Mono Lake to Owens Valley; with the Loon Lake Water & Power Co., with sites on the Rubicon River on the western slope of the Sierras; is connected with the engineering firm of Stone & Webster, of Boston, owners or operators of many electric power developments on this coast; and is probably more or less connected with the Southern Pacific Co. in its activities on the Yuba and American Rivers, and in its proposed plans for the electrification of its mountain division. In this connection and in the following, attention is called to an extract from the Electrical World of July 29, 1909, copied on pages 56 and 57.

Probability of monopoly.—The above-named companies not only control all the power market of eastern California and Nevada, but all the most favorable source of supply. No one single factor could assist more in making the present monopoly effective than the reservation of this entire watershed of 1,520 square miles to the Truckee River General Electric Co. for a period of five years, during which time they may exercise a blanket permit of location.

Relation to Forest Service policies.—It is the fixed policy of the Forest Service, the wisdom of which is constantly becoming more evident, to grant no rights in perpetuity for commercial power companies operating within the national forest. It is also a fixed policy that for the franchise granted a certain payment must be made for the enjoyment of the franchise. Both of these principles would be violated if the terms of this agreement were made to apply to national forest land. It is true that comparatively little such land would be occupied by the actual structures of the power plants, but this is true in every instance of power development. The important feature is the watershed that lies behind the reservoirs and conduits and from which they receive their supply.

Respectfully submitted.

O. C. Merrill, *Engineer.*

San Francisco, Cal., *September 20, 1909.*

Department of the Interior,
Washington, May 19, 1909.

The honorable the Secretary of Agriculture.

Sir: There is herewith transmitted draft of a contract now under consideration with a view of securing for the Truckee-Carson project under the reclamation act the regulation of the storage waters in Lake Tahoe, situated in California and Nevada.

The Truckee River General Electric Co., with which this contract is to be made, proposes to construct a tunnel in Nevada from the northern end of Lake Tahoe to Lake Washoe, and the same will cross the Tahoe National Forest, as shown on the sketch herewith.

The proposed structures will consist of inlet controlling works at the lake and from that point the works will be entirely in tunnel while within the exterior boundaries of the national forest.

It is understood that the route will cross no public lands whatever.

The benefit received by the United States in this connection, so far as it can be measured in money, is as follows:

The United States acquires the exclusive control of the outlet works from Lake Tahoe, with full power to operate the controlling works and secure the benefit of the storage of the waters at an actual expenditure of about $25,000, being one-half the cost of the outlet works, estimated at about $50,000. The United States is also relieved of the cost of moving the railroad along Truckee River, estimated to cost about $10,000.

In the negotiations for the purchase of the tract at the lake outlet the price agreed upon had been fixed at $56,000. The total cash saving is therefore about $91,000.

The savings in time and water are very large. It is certain that no contract could be made with the company that would not provide for a right of way for this tunnel, so that in the absence of such contract the necessary rights could be acquired by the United States only after years of litigation to condemn the property, and at large cost for the legal proceedings. This would mean a restriction of the Truckee-Carson project to about one-half its possible area and would prevent for many years the irrigation of some 70,000 to 80,000 acres of land, a considerable portion of which is Indian land within the Pyramid Lake Indian Reservation.

The tunnel proposition will also correspond to a saving to the United States of a water supply estimated about 200 second-feet and equivalent to that required for the irrigation of 20,000 acres of land. It amounts practically to a shifting of a water supply for power now vested for perpetual use from the Truckee River to the tunnel outlet and thence back again to the Truckee, with the advantage in the latter case that it can be stored for irrigation instead of being wasted during the winter.

The provision of paragraph 7 relating to the general use of storage possibilities on the tributaries of the Truckee as may be necessary to utilize the waters of Lake Tahoe is supplementary to this diversion of water for which the company now has a vested right and may involve the use of certain reservoir sites within the national forest now withdrawn under the reclamation act, though only a small part of the land involved is public land. These reservoir sites will probably be constructed by the United States if they are not constructed by the company under this contract.

Considering the benefits to be derived by the United States from this contract it would appear to be largely in excess of any charge which the Forest Service would be likely to demand in connection with such right of way. The estimated power to be developed by the company is about 30,000 horsepower.

In view of the considerations passing to the United States by this contract in cash saving of $91,000, saving in annual water supply of 200 cubic feet of water per second and the avoidance of years of delay in settling this question so as to provide for the full development of the Truckee-Carson project, it is believed that the contract involves full compensation to the United States for any use of the natural resources which is involved.

Very respectfully, R. A. BALLINGER,
Secretary.

This agreement made this —— day of ——, 1909, by and between the Truckee River General Electric Company, a corporation organized and existing in the State of California, its successors and assigns, party of the first part, hereinafter styled the "company," and the United States, acting in this behalf by ——, Director of the United States Reclamation Service, and subject to the approval of the Secretary of the Interior, party of the second part, witnesseth:

Whereas the company claims title to a tract of approximately fifty-four acres in the State of California at the outlet of Lake Tahoe into Truckee River, together with the dam now constructed upon said premises near the head of Truckee River and the tenements, hereditaments, appurtenances, and easements thereunto belonging, and by means of said dam now regulates the flow of waters so as to be available for use in the operation of several plants and factories on Truckee River hereinafter mentioned; and

Whereas the United States desires to utilize the waters stored in Lake Tahoe in connection with the Truckee-Carson project in Nevada, constructed under the provisions of the act of Congress approved June 17, 1902 (32 Stat., 388), known as the reclamation act, and claims, under appropriations made by it or on its behalf, the unappropriated and surplus waters of Lake Tahoe and the Truckee River for irrigation and other uses in connection with said Truckee-Carson project, and in this connection has also reserved the public lands along the shores of Lake Tahoe and in the immediate vicinity; and

Whereas the parties hereto now desire to provide for the utilization of all the waters of Lake Tahoe and of the Truckee River for irrigation and power purposes in such manner as to protect all vested rights to the use thereof for such purposes, and also to avoid waste of any such waters, so far as may be practicable, and generally to cooperate to the fullest extent for the beneficial utilization of the waters of Lake Tahoe; therefore the parties hereto agree:

1. The said lands, aggregating approximately fifty-four acres, and the dam thereon and rights appurtenant thereto at the outlet of Lake Tahoe into Truckee River were acquired and are now held and have for a long time been held or controlled by the company for the purpose of controlling and regulating the flow of water from Lake Tahoe down the Truckee River, where such water is used in the operation of five certain power plants or factories located upon the banks of said river and extending from Floriston in California to a point at or near Reno in Nevada.

The said power plants or factories are of the description and character set forth in the following schedule:

Name.	Location.	Diversion capacity.
		Cubic feet per second.
Floriston Pulp & Paper Co	Floriston	400
Truckee River General Electric Co	Farad	400
Do	Fleish	300
Washoe Power & Development Co	Mogul	300
Reno Power, Light & Water Co	Reno	300

It is agreed and understood that the amounts of water above specificied are sufficient for all of said plants and factories; the same waters being used successively by each of them as such waters pass down the said river.

2. It is further understood and agreed that in order that the flow of said waters shall continue to be available for use in the operation of said plants, it is necessary that the gates of the dam at the lake outlet should be so manipulated that the flow of the Truckee River at Floriston in the State of California shall not be less than 500 cubic feet per second from the 1st day of March to the 30th day of September, inclusive, in each year, and not less than 400 cubic feet per second from the 1st day of October to the last day of February, inclusive, in each year, and so that the lake elevation on the 1st day of October shall be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December.

3. In order that there shall be secured to the United States for the irrigation and other uses of the Truckee-Carson Project all the water supply available by storage in Lake Tahoe, subject only to the conditions of flow and the other conditions herein in this agreement fixed by the parties, the company covenants and agrees, forthwith to reconstruct its said dam at Lake Tahoe and to build new outlet works in connection therewith, also gatekeepers' buildings, and perform the necessary dredging in accordance with plans to be approved by the Director of the Reclamation Service, and to push such construction to completion at the earliest date practicable, and to complete the same or such parts thereof as the Director of the Reclamation Service may require on or before November 1, 1909. Prior to November 1, 1909, such changes in the bridges, grade, and track of the Lake Tahoe Railway Transportation Company as may be necessary for the discharge of twenty-five hundred cubic feet of water per second down the Truckee River without damage to the railroad shall be provided and the expense thereof shall be borne by the company; and until such changes are made, the company shall be responsible for all damage to lands or property on the margin of Lake Tahoe or along the Truckee River, and the company agrees that it will secure, etc. The company shall not be required to do any work of construction or reconstruction of the dam and outlet works which will affect vested rights in respect to the waters of Lake Tahoe and Truckee River as the same now exist, or which will subject it to claims for damage or injury in respect thereof.

4. The company agrees that, subject to the conditions of flow and the other terms and conditions of this agreement, the United States, commencing on the 1st day of November, 1909, shall have the actual and exclusive control and operation of said dam and outlet works, and the proper officers and agents of the United States shall at all times have unrestricted access to the premises, and the right to use the same and the buildings and works thereon for the purposes of such control and operation. The United States covenants and agrees that, after assuming control hereunder, it will at all times properly provide for such control and operation under the terms of this agreement and will pay all the cost and expense of the same. In the operation of the said works for the control of the outflow of Lake Tahoe, the United States covenants and agrees to so manipulate the gates of the dam at the lake outlet that the flow of the Truckee River, at Floriston, in the State of California, shall not be less than 500 cubic feet per second from the 1st day of March to the 30th day of September, inclusive, in each year, and not less than 400 cubic feet per second from the 1st. day of October to the last day of February, inclusive, in each year, and so that the lake elevation on the 1st day of October shall be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December. Subject to the aforesaid conditions of flow and lake level and subject to the rights of the company and other owners to maintain and operate at all times their respective plants and factories as aforesaid and subject to the vested rights on Lake Tahoe and the Truckee River, the United States, in the operation of said outlet works, shall have the exclusive right to regulate the flow of water through said works in such manner as may be deemed best by the United States, to secure for its use in the Truckee-Carson project for irrigation and other purposes, all the water supply available by storage in Lake Tahoe. The company agrees that after July 1, 1909, and prior to turning over the exclusive control of the dam and outlet works of Lake Tahoe to the United States, the company will operate the gates for the discharge of water into Truckee River, according to such schedule, not inconsistent with the terms of this contract, as may be furnished by or under authority of the Director of the Reclamation Service.

5. Whenever the company shall relieve the United States from its agreement to operate the outlet works so as to deliver water in the manner and in the amount, as hereinbefore specified, from Lake Tahoe to the power plants on the Truckee River, and the company shall agree, to the satisfaction of the Secretary of the Interior, to assume the responsibility and liability of satisfying vested rights of all kinds on the Truckee River above Clarks Station on the Southern Pacific Railroad, said station being situated above the head of the canal constructed by the United States, and shall have made adequate provision to satisfy (such) all riparian vested and other rights, to the satisfaction of the Secretary, then the United States guarantees to deliver water from Lake Tahoe to the said company at a point of delivery and diversion to be selected by the company on the margin of Lake Tahoe, not higher than the natural outlet of said lake, and without charge other than the stipulations of this agreement: *Provided, however*, That in case of such diversion a sufficient amount of

water shall by means of storage, or otherwise, be delivered by the company to the Truckee River through natural or artificial channels, at or above said Clarks Station so there shall be available for irrigation, and other purposes, for the Truckee-Carson project of the Reclamation Service, the same amount of water and rates of flow which the United States would secure for the said project by the terms of the preceding paragraphs of this agreement. It is the essence hereof that in case of such diversion the same quantity of water and rates of flow shall be received by the United States at the head works near Clarks Station as if no such diversion or other storage had been undertaken; but in any event, when adequate provision is made to satisfy the vested rights as hereinbefore specified, it is agreed that the United States will deliver to the company at its said point of diversion from Lake Tahoe a daily average draft of 240 cubic feet per second, this amount to be given to the company each day at such rates of flow during the day as the company may require for its uses: *Provided, however*, That the company, when using this said average draft at varying rates of flow during the day, shall not draw a greater amount than 476 acre-feet during any one civil day. In the event of such diversion, the storage controlling works and channels therefrom shall be under the exclusive control of the United States.

6. The company and its assigns in case of such diversion shall have the exclusive right to use the waters delivered and diverted in pursuance of paragraph 5 for such power purposes as it or they may desire at any point or points before such diverted waters are taken into the Truckee-Carson canal by the United States at the headworks near Clarks Station, but in such manner that, subject to the terms hereof respecting guaranteed flow, there shall be no unnecessary waste of water available for the Truckee-Carson project.

7. The United States agrees that the company shall have the right to construct and properly maintain such power plant or plants, with appurtenances and connections, as the company or its assigns from time to time may elect, on land owned or controlled by the United States and as may be necessary to utilize the waters of Lake Tahoe, and the Truckee River and tributaries in connection with the purposes of this agreement, and shall also have the right of ingress and egress on such Government land and the right thereon to carry pipes, tracks, and roadways, to place poles, and to run wires under ground or over head, as may be necessary in connection with the proper and satisfactory operation and maintenance of such plants as are built to utilize said water in case of such diversion.

8. The United States covenants and agrees that after it assumes operation of the dam and outlet works hereunder and after the completion of the Lake Tahoe dam outlet works and railroad construction as hereinbefore specified, it will protect and save harmless and indemnify the company against all claims for damages to persons or property including the dam and other property of the company, due to the operation of the dam and outlet works; but the United States shall not be held liable for damage to any property or interests below the outlet works resulting from a discharge of 2,500 cubic feet of water per second from Lake Tahoe into Truckee River. The company agrees to hold the United States harmless against all claims for damage due to the operation of the gates at the outlet, prior to the

completion of the said Lake Tahoe dam, outlet works, and railroad reconstruction.

9. The company shall provide for all needful repairs and renewals of all of its works which are under the control of the United States, and shall promptly provide for such repairs or renewals as may be deemed necessary by the Director of the Reclamation Service, and in case of failure to do so after due notice, such work may be done by the United States at the expense of the company: *Provided*, That the cost of all repairs and renewals of any works or structures at the outlet from Lake Tahoe into Truckee River shall be borne equally by the company and by the United States: *Provided further*, That the United States shall pay all expenses of operation of all works of the company which are operated by the United States.

10. The United States shall not in any manner be liable for failure to maintain the flow of water specified in the several paragraphs of this agreement when such failure shall have been caused by extraordinary drought or other act of God or the public enemy or by unlawful interference; but it is agreed and understood that the United States shall have the right, subject to the specifications to flow herein made, to draw water from Lake Tahoe at any time and in such quantity as in the judgment of the Director of the Reclamation Service may be necessary to prevent damage to lands on the margin of Lake Tahoe, and in such case so much of said water shall be delivered to the company as may be requested by it. It is also understood and agreed that until completion of the new dam and other works by the company, the flow of water down the Truckee River shall be subject to and dependent upon the capacity of the works now existing.

11. In further consideration of the stipulations and agreements of this contract the United States will pay to the company upon the completion of the dam, outlet works, gatekeeper's buildings, and required dredging at the outlet of Lake Tahoe an amount equal to one-half the reasonable and necessary cost thereof as determined by the director, and upon the completion of said works at the Tahoe outlet the United States will execute, without other rental charge than the stipulations hereof, and upon conditions satisfactory to the Director of the Reclamation Service a ten-year lease for the tract of land purchased by the United States from the Mercantile Trust Company, by deed dated August 9, 1904, and recorded in book 86 of Deeds, at page 22, records of Placer County, California; and the United States further agrees that if within the said ten years authority shall be granted by Congress for the alienation of such tract of land, the same shall be transferred to the company or its assigns at a price of $100 per acre in the option of the company; said option to continue for a period of one year only from the date of the granting of the aforesaid authority by Congress, and shall not in any event continue longer than eleven years from the date hereof.

12. It is understood and agreed that the agreements on the part of the United States herein contained as to regulating and controlling the flow of water and as to delivery of water in case of diversion are the chief considerations moving the company to execute this agreement, without which and confidence in the performance of which by the United States, this agreement would not be made, and no person, firm, or corporation, other than the United States, and no assign of

the United States, whether by statute or otherwise, shall have any right to regulate or control the outlet works of the company under this agreement. This agreement shall inure to the benefit of and bind the successors and assigns of the company as well as the company itself.

13. This agreement shall not operate to bind the United States until it shall have been approved by the Secretary of the Interior, whose approval or disapproval will be signified within thirty days from receipt of copy hereof duly executed by the company.

14. No Member of or Delegate to Congress, officer, agent, or employee of the United States is or shall be admitted to any share or part of this contract or to any benefit to arise therefrom, and sections 3739, 3740, 3741, and 3742, Revised Statutes of the United States, so far as applicable, enter into and are a part of this agreement.

15. This contract is executed on behalf of the company in pursuance of a resolution of its board of directors dated ———, certified copy of which is hereto attached.

In witness whereof the parties to this agreement have hereunto set their hands and the company has caused its corporate seal to be affixed the day and year first above written.

TRUCKEE RIVER GENERAL ELECTRIC COMPANY,
By ——— ———.

——— ———,
Director of the United States Reclamation Service, for and on behalf of the United States, party of the second part.

Approved this ——— day of ———, 1909.

——— ———,
Secretary of the Interior.

State of ———, county of ———, *ss:*

On this ——— day of ——— in the year ———, before me (officer's name and quality of officer), personally appeared ———, known to me (or proved to me on the oath of ———) to be the president (or secretary) of the corporation who executed the within instrument, on behalf of the corporation therein named, and acknowledged to me that such corporation executed the same.

MAY 22, 1909.

The FORESTER:

Please advise me with regard to this proposition and return all papers for reference to the solicitor.

Very truly, J. W., *Secretary.*

DEPARTMENT OF JUSTICE,
Washington, May 26, 1909.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge the receipt of your letter of May 18, instant, in which you request my opinion upon the validity of certain contracts entered into by the Secretary of the Interior with associations of water users claiming the benefits of the act of June 17, 1902 (32 Stat., 388), commonly known as the reclamation act.

In answering your inquiries it is necessary to enquire whether regulations made by the Secretary were authorized by the statute.

The reclamation act is entitled "An act appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands."

By the first section it is provided that all moneys received from the sale and disposal of public lands in certain-named States and Territories (excepting 5 per cent) shall be reserved, set aside, and appropriated as a special fund in the Treasury, to be known as the "Reclamation fund," to be used in the examination and survey for and the construction and maintenance of irrigation works for the storage, diversion, and development of waters for the reclamation of arid and semiarid lands in the said States and Territories, and for the payment of all other expenditures under this act.

The second section authorizes the Secretary of the Interior to make examinations and surveys for, and "to locate and construct, as herein provided, irrigation works for the storage, diversion, and development of waters."

Section 3 provides that upon completion of preliminary surveys and of the necessary maps, plans, and estimates of cost, after withdrawal of the public lands required for irrigation works, the Secretary shall determine whether or not said project is practicable and advisable, and that public lands which it is proposed to irrigate by means of any contemplated works shall be subject to entry only under the provisions of the homestead laws in tracts of not less than 40 nor more than 180 acres and shall be subject to the limitations, charges, terms, and conditions herein provided.

Section 4 is as follows:

> That upon the determination by the Secretary of the Interior that any irrigation project is practicable he may cause to be let contracts for the construction of the same, in such portions or sections as it may be practicable to construct and complete as parts of the whole project, providing the necessary funds for such portions or sections are available in the reclamation fund, and thereupon he shall give public notice of the lands irrigable under such project and limit of area per entry, which limit shall represent the acreage which, in the opinion of the Secretary, may be reasonably required for the support of a family upon the lands in question; also of the charges which shall be made per acre upon the said entries, and upon lands in private ownership which may be irrigated by the waters of the said irrigation project, and the number of annual installments, not exceeding ten, in which such charges shall be paid and the time when such payments shall commence. The said charges shall be determined with a view of returning to the reclamation fund the estimated cost of construction of the project and shall be apportioned equitably: *Provided*, That in all construction work eight hours shall constitute a day's work, and no Mongolian labor shall be employed thereon.

Section 5 provides that the entryman shall reclaim at least one-half of his irrigable area for agricultural purposes and that the annual installments shall be paid to the receivers of the local land office and that all moneys received shall be paid into the reclamation fund.

By section 6 the Secretary of the Interior is directed to use the reclamation fund for the operation and maintenance of all reservoirs and irrigation works constructed under the provisions of the act; and when the payments for the major part of the lands irrigated are made, the management and operation of the works shall pass to the owners of the lands to be maintained at their expense, under such forms of regulation as may be acceptable to the Secretary of the Interior; but the title to and the management and operation of the reservoirs and works necessary for their protection and reservation shall remain in the Government until otherwise provided by Congress.

Section 7 provides that where it is necessary to acquire any rights or property the Secretary may acquire them by purchase or condemnation, and may pay from the reclamation fund the sums which may be needed for that purpose.

Section 8 provides that the act shall not be construed as affecting the laws of the State or Territory concerning irrigation or the right of any State or Territory or water user in interstate streams or the water thereof.

Section 9 requires the Secretary to expend, as far as practicable and subject to the existence of feasible irrigation projects, the major portion of the funds arising from the sale of public lands with each State and Territory for the benefit of arid and semiarid lands therein, but authorizes him to use the funds in any State or Territory named in the act, and requires that the excess shall be restored to the fund as soon as practicable, so that the expenditures shall, in any event, within each 10-year period after the passage of the act be equalized as far as practicable.

The tenth section authorizes the Secretary of the Interior to perform any and all acts and to make such rules and regulations as may be necessary and proper for the purpose of carrying the provisions of the act into full force and effect.

You state that:

> Under the provisions of this act numerous withdrawals were made and irrigation works constructed or begun. The receipts from the sales of the public lands and construction charges collectible from completed projects not creating a sufficient fund to carry on and complete the projects initiated, the Secretary of the Interior by regulations dated February 21, 1908, as amended May 28, 1908, directed that upon determination by the engineer of the Reclamation Service in charge of a reclamation project that certain work is to be done, he should, by contract with the water users or settlers association, or if there be no such organization, with a representative committee of settlers, whereby it or they were to perform work or furnish materials upon or for such uncompleted divisions of the project as would most effectively expedite the completion of the work and insure the best financial results. In carrying out this arrangement it was provided that the Reclamation Service for and on behalf of the United States and the association, or committee of the settlers, should enter into a contract whereunder the association or settlers were to advertise for competitive bids to secure the work on the project or a portion of the project, to be done at the lowest possible rates, competition to be waived in specific cases. The work so performed was required to be under the direct supervision and approval of the reclamation engineer, and settlements for the work done were to be in the form of certificates which, when approved by the project engineer, should be receivable in reduction of water-right charges levied by the Secretary of the Interior under the reclamation act. Each person performing work or furnishing materials or supplies under such a contract is required to file a stipulation or agreement to the effect that no cash will be paid for such work or materials or supplies, "but in lieu thereof settlements shall be made and accepted by the issuance of certificates setting forth the value thereof, which shall be receivable in reduction of charges on lands in this reclamation project, in accordance with regulations approved by the Secretary of the Interior."
>
> Upon certification by the engineer in charge as to the satisfactory completion of a definite section or portion of the work, or upon delivery or acceptance of supplies and materials, the association or settlers execute, in duplicate, certifi-

cates which, in substance, are to the effect that work has been done or materials or supplies furnished to the value of $——— upon the ——— project, and that the amount will be credited on installments due or to become due for water rights on lands held or entered under the project, and may be credited both upon building and operation and maintenance charges. Duplicate certificates are issued and registered in the local office of the Reclamation Service. The regulations further provide for the surrender of these certificates, and upon their being found correct and unaltered and the amount surrendered found to be equal to one or more installments of the water-right charges or operation and maintenance charges, the reclamation engineer accepts the certificate and issues a receipt acknowledging the surrender of the described certificates for work performed and materials delivered. Where the amount of certificate surrendered is not equivalent to a full installment the balance is required to be paid in cash. The canceled certificates are then forwarded to the Director of the Reclamation Service, with recommendation that the water-right charges against the lands of the person surrendering the certificate be reduced by an amount corresponding to the value of the certificate. If found to be correct the Secretary of the Interior, upon recommendation of the director, gives notice of the reduction of the water-right charges on the lands accordingly, and directs the Commissioner of the General Land Office to accept and receive the charges payable on the lands as reduced by the certificates surrendered.

You further state:

* * * that for a number of years the people of Grand Valley, Colo., have been urging the Government to construct a high-line ditch in that valley to irrigate lands above the level of a private ditch now in operation there. The water users' association, purporting to represent the people, finally agreed to secure subscription among the people interested to aid the Government in the construction of the project, sufficient funds for that purpose not being available in the reclamation fund. The informal understanding with the people was that upon their cooperation the construction of the project would be taken up immediately. In February, 1909, the Grand Valley Water Users Association submitted a showing to the effect that subscriptions for cooperative work in constructing this project had been made to it of $90,000 in money and about $40,000 in promised work, a total of about $130,000. The association asked that the Government allot $125,000 from the money in the reclamation fund for use during the year 1909, which, with allowment previously made and the subscription from the association, would make a total available sum of $330,000. The estimated total cost of the project is $2,500,000.

Upon the consideration of the matter my predecessor, acting for the United States, and the Grand Valley Water Users Association, on February 20, 1909, entered into a contract which recited that as the United States contemplates the construction of certain irrigation works for the irrigation of such lands as may be found feasible in Grand Valley, and the association is desirous of cooperating with the United States, in order that the project may be sooner begun, and has for the purpose secured subscriptions, money, and labor exceeding $125,000, it was agreed that the association should make available for construction the money and labor so subscribed, and the Secretary of the Interior should allot $125,000 from the reclamation fund, to be used upon said project to an extent equal to the amount of subscriptions made available by the association in money and work. The moneys collected by the association were to be deposited in banks in Colorado, subject to the check of the treasurer of the association when countersigned by the fiscal agent of the Reclamation Service assigned to the project. The association was authorized to give to persons subscribing money for the purpose indicated a receipt or certificate to the effect that the payor or his assignee after the application of the money to the cost of construction would be entitled to receive from the association cooperation certificates to the amount of the moneys paid by him. The association was further authorized to contract for such work and material as might be requested by the project engineer and upon completion of the work or furnishing and accepting of the materials the engineer is to submit to the association accounts showing by whom the work was done or materials furnished, and thereafter the project engineer of the Reclamation Service is to register cooperative certificates equal to the total of the accounts and deliver the same to the persons who paid in money upon calls issued by the association. The agreement provides that these cooperative certificates are not to be redeemed in money by the United States, but will be accepted and applied at their face value in reduction installments of water-right charges hereafter to accrue against the lands within the project. The agreement further provided that the certificates might be redeemed by the association in cash, secured by assessments against all land under the project or with funds derived from its first assessment for the collection of charges announced in the public notice by the Secretary of the Interior.

Section 10 of the agreement provides that only those who are or may become members of the water users' association will be accepted as applicants for rights to use the water under the proposed works and that no applications for water rights will be accepted by the United States until the secretary of the water users' association certifies that the applicant has subscribed for stock of the association for the lands and paid all assessments levied against said stock.

You further state that—

> * * * prior to the initiation of the project the Grand Mesa Land, Canal & Power Co. had filed on 1,200 second-feet of water from the Grand River, to be used upon irrigable lands on both sides of the river in Grand Valley. About the time of the initiation of the irrigation project by the United States in Grand Valley, my predecessor approved a contract or agreement whereunder the Government abandoned so much of its project as related to Orchard Mesa south of Grand River, so as to permit the construction of a private irrigation ditch through that area and the construction company having the matter in charge transferred to the United States one-half of the stock of the Grand Mesa Land, Canal & Power Co., the purpose of the transfer being to secure the United States against any claim on the part of the Orchard Construction Co., owner of all the stock of the Grand Mesa Co., or the Orchard Mesa irrigation district, to the use of the water of Grand River in excess of the amount needed for their project. It was agreed in the contract relating to Orchard Mesa that if the United States should decide not to construct the Grand Valley project the stock in question should be returned to the Orchard Construction Co.
>
> The latter company is now before the department offering to construct irrigation works on the north side of the river should the Government abandon the project and the stock above described be returned.

In view of this statement of facts, the first inquiry you make to me is—

> Whether, in view of the provisions of the reclamation act hereinabove set out, expressly providing as to how funds for construction of irrigation works are to be maintained and forbidding the letting of contracts for construction until the necessary funds are available in the reclamation fund, and of the requirement that the charges shall be so assessed as to return the entire estimated cost of construction to that fund, this department has any right to recognize or enter into contracts with voluntary water users' associations or individuals whereunder they shall enter into partnership or cooperate with the United States in the performance of work or furnishing of money, supplies, or materials to be used in the construction of reclamation works under the act of June 17, 1902, supra.

Looking to the act itself, I find little difficulty in its construction. The objects of the act are clearly expressed. It appropriates the proceeds of the sale of public lands in certain States and Territories for the construction of irrigation works for the reclamation of arid and semiarid lands. These proceeds constitute a fund known as the reclamation fund, by the use of which the Secretary of the Interior can develop this project. The whole scheme is based upon and limited in its extent to the proceeds of the sale and disposal of the public lands. No further appropriation by the Government is made or indicated. The plan is in furtherance of the principles of the homestead laws, to improve the character of these undesirable lands for settlers. The Secretary could withdraw from public entry, except from homestead laws, lands susceptible of irrigation; and public lands proposed to be irrigated are subject to entry only under the homestead laws. (Sec. 3.)

The manner of the use of the fund is explicitly stated. When the Secretary of the Interior has determined that a project is practicable he may cause to be let contracts for construction of such portions or sections as it may be practicable to construct and complete as parts of the whole project, providing the necessary funds for such portions or sections are available in the reclamation fund. This is a plain declaration of the authority conferred upon the Secretary. By the terms of this statute he can not commence any construction of any portion of the work unless the necessary funds are available in the "reclamation fund." There is no ambiguity in these terms. The funds must either be in the "reclamation fund" or definitely provided for from sales of public lands. To make this more positive the statute further says, after providing for the charges which shall be made upon the lands and the time of their payment, that these charges shall be determined with a view of returning to the reclamation fund the estimated cost of construction of the project.

The whole intention of the act upon its face is to give to the Secretary of the Interior the power to construct and maintain certain irrigation works by the use of a fund derived as I have stated. He is limited in the exercise of his powers by the law. If the law has defined those powers he can not act beyond that limit. His acts would be without authority.

In considering an inquiry as to the authority of an officer to bind the Government, the Supreme Court, in the Floyd Acceptances (7 Wall. 666, 676), said:

> The answer, which at once suggests itself to one familiar with the structure of our Government, in which all power is delegated, and is defined by law, constitutional or statutory, is, that to one or both of these sources we must resort in every instance. We have no officers in this Government, from the President down to the most subordinate agent, who does not hold office under the law, with prescribed duties and limited authority, and while some of these, as the President, the Legislature, and the Judiciary, exercise powers in some sense left to the more general definitions necessarily incident to fundamental law found in the Constitution, the larger portion of them are the creation of statutory law, with duties and powers prescribed and limited by that law.

These observations are of special force when applied to a series of rules and regulations as in this case. Being intended to be applicable as general rules, where a new and specific authority is given to the officer, all the Secretary can do is to regulate the mode of proceeding to carry out what Congress has enacted. He can not alter or amend the law. (Morrill *v.* Jones, 106 U. S. 466, 467.)

No further extension of his powers is granted by the tenth section, by which he is authorized to perform any and all acts and to make such rules and regulations as may be necessary and proper for the purposes of carrying the provisions of the act into full force and effect. This does not warrant him to import into the act authority to obtain any other means to construct irrigation works than those stated. The act is an appropriation of money obtained in a specific way for a specific purpose. That that purpose can be more fully accomplished in a different way does not confer upon the officer the power to direct that way. That would be to amend the law, which is not the office of a departmental regulation. As was said in Johnson *v.* Southern Pacific Co. (117 Fed. Rep. 465):

> While ambiguous terms and doubtful expressions may be interpreted to carry out the intention of a legislative body which a statute fairly evidences, a

> secret intention can not be interpreted into a statute which is plain and unambiguous, and which does not express it. The legal presumption is that the legislative body expressed its intention, that it intended what it expressed, and that it intended nothing more.

These regulations go far beyond the terms of the statute. By providing for another fund and another mode of paying for irrigation work they amend the act. This contract made under them creates a joint action on the part of certain water users with the Government by which they propose to advance certain moneys and perform work in the prosecution of the project. The certificates issued by the association and registered by the engineer are transferable; and, although not redeemed in money by the United States, entitle the holder to a credit for their face value and may be applied in part or full payment of the charges against his lands. By this proposed scheme the money subscribed is not in, nor does it at any time go into the reclamation fund. There is no security that it will be in that fund or that the work agreed upon will be done, although the Government officer furnishes his proportion. In the sixth section of the act it is provided that when the payments are made for the major portion of the lands irrigated, the management shall pass to an organization of the owners. If there had been contemplated any previous combination of water users provision would have been made for it.

I might state other objections to the plan permitted by the regulations, such as the attempted exclusion of all applicants for water rights who are not members of the association; but I deem it unnecessary, because, in my opinion, the Secretary of the Interior was without authority to enter into contracts of this nature. The regulations under which they are drawn, in my opinion, alter materially the reclamation act, which, as has been said, can not be done by departmental regulation.

Your second inquiry is:

> If you find that the law does not authorize or permit such corporation, whether the United States is warranted in honoring and accepting all cooperation certificates already issued on the various projects or whether the only relief which may be extended to those who have performed labor or furnished moneys, materials, or supplies will lie in an act of Congress authorizing the payment to them of the money value of such labor, supplies, or materials.

These certificates, having been issued under an unwarranted contract, can not be received as credits for the charges imposed upon the land under the statute. They can not be used by the original payee or transferee as a discharge pro tanto of his indebtedness. But they are evidence of work performed, proper and necessary in the construction and maintenance of the irrigation work, done under the supervision and inspection of the chief engineer, and certified to be correct, as memoranda for that officer. In this view, I think the work may be paid for as upon a quantum meruit, if there are funds in the reclamation fund. This may cause confusion by reason of the irregularity of the procedure; but, upon familiar principles, would seem to be equitable to the persons furnishing the materials and work. It precludes the recognition of the association as a joint participant in any way. It becomes a transaction between the persons performing the services and the officers of the Government charged with the duty of construction. If the money necessary does not come into the reclamation fund in the manner prescribed in the act the parties have no remedy except in an application to Congress for an appropriation, or for an amended act providing in the way suggested by the contract, or some similar way for credits upon charges on the land.

Your third inquiry is:

> As to the Grand Valley contract, in the light of the foregoing questions and in view of the further fact that no work has been done except preliminary surveys, that the subscriptions have not been used by the United States and the total amount so subscribed, together with the amount apportioned by the United States, not being sufficient to complete any portion or section of the project, whether said contract can be legally abrogated by the United States upon condition that it return to the Orchard Construction Co. the stock in the Grand Mesa Land, Canal & Power Co.

It seems that the Grand Mesa Co. had rights of irrigation, to be used on both sides of Grand River in Grand Valley, prior to the initiation of the Government project. An agreement was entered into by the company with the Secretary of the Interior, by which the Government abandoned that part of its project which related to the south of Grand River, and permitted the company to construct a private irrigation ditch through that area. The company transferred one-half of its stock to the United States to secure the United States against any claim on the part of the company or its associates for an excessive use of the water of Grand River. If the United States did not proceed with the Grand Valley project the stock was to be returned.

Under this agreement no obligation rested upon the Government to construct the irrigation works in Grand Valley.

The permission in the agreement to construct a private irrigation ditch is immaterial. If that permission was granted in consideration of an agreement by the Government not to proceed with a portion of its project in that area, the agreement was entered into without authority.

Nothing has been done under the Government project affecting this portion of lands. Whether, in the event of the prosecution of the Grand Valley project, it might be necessary to acquire the rights of this company does not appear. If it should be, the manner of doing so is stated in the seventh section of the act. I think this would not be affected by a supposed agreement not to operate in the lands south of the Grand River if it became necessary to acquire rights and property to carry out the provisions of the act. All rights of the company, under its incorporation, are recognized and protected by the eighth section.

Notwithstanding that the whole contract, as presented to me, may be regarded as void, manifestly the stock should be returned to the Orchard Construction Co. Joint control and operation is not recognized in any manner by the statute. The return of the stock can not be conditional upon an abandonment by the Government of any part of the proposed project. It simply leaves the parties, the Government and the company, where they were before the signing of this "contract."

You ask:

> * * * to be further advised whether in view of the provisions of section 1 of the reclamation act, which provides a fund for the construction and maintenance of irrigation works, and of section 6, which provides that the manage-

ment and operation of the works shall pass to the owners of the lands irrigated to be maintained "at their expense" after construction charges have been paid for the major part of the lands irrigated, whether the United States is warranted under the law in exacting from water-right applicants and entrymen prior to such time annual payments for maintenance and operation of the reservoirs, ditches, and canals in the project wherein the lands lie. The present practice is to fix a definite charge per acre in each project to cover the cost of construction and to assess annually a specific amount per acre for operation and maintenance, collecting the same from the land owners.

I think the practice of the department is correct. The reclamation fund is, among other things, for the construction and maintenance of the irrigation works. It is true that by the fourth section the charges shall be determined with a view to returning the estimated cost of the construction. The act may be fairly construed to include in the fund charges for maintenance. Especially is this inferable when it is apparent from the language of the sixth section that when the management and operation shall pass to the owners of the irrigated lands the expenses of maintenance are to be paid by them. These expenses are clearly the same as were theretofore paid by the Government out of the reclamation fund. Unless they had been charges upon the land and collectible as such, the fund, which, by the theory of the reclamation plan is to be used in constructing other works, would be kept intact. The present practice of the department prevents the fund from being diminished and leaves it available for the intended purposes.

Referring to several statutes providing for the opening of certain Indian reservations to settlement and entry and extending the reclamation to lands thereon, you request to be advised as to whether your department " has the right to exact the payment of maintenance or operation charges from settlers, entrymen, and private land owners within reclamation projects prior to the time when payments have been made for the major portion of the lands irrigated."

Without reciting the language of those statutes, I think their object, in this respect, was to extend the irrigation provision of the act of June 17, 1902, to the Indian lands.

In some cases the fund is raised, originally, in a different manner from that provided in that act, inasmuch as money is appropriated for the purposes of construction. In others it is obtained in a way similar to that of the general act. But always the costs are paid from the proceeds of the sales of lands; and in the case of advancements the sums advanced are to be thus reimbursed.

I am of the opinion the practice referred to by you is also the correct one in the reclamation projects on these Indian reservations. Indeed, it is clearly approved by Congress. Thus, on the Yakima Reservation, the Secretary is authorized to cover into the reclamation fund the money of the Indians for payment of charges for construction and maintenance for the water rights appurtenant to the land retained by him, or for the annual maintenance charges payable on account of such water rights after the construction charge thereon has been paid in full. And on the Fort Peck Reservation, where the Secretary of the Interior is authorized to construct irrigation projects, all applicants for water rights may be required to pay such annual charges for operation and maintenance as shall be fixed by the Secretary, and the Secretary is authorized to fix the time for the beginning of such payments and to provide such rules and regulations thereto as he may deem proper. The Indian allottee is not required to contribute to the cost of construction, but his lands must bear their pro rata share of the cost of operation and maintenance, and the Secretary withholds his moneys to pay such charges. (35 Stat., 552.)

The distinction is made between costs of construction and costs of maintenance, but both are recognized as payable from a charge upon the land.

The right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right. It is entirely reasonable that the water user should pay for the use from the time the water is delivered upon the land, which is, as I understand, all that is required of him.

This is made more definite in these Indian acts than it appears in the general act. As I think that the authority of the Secretary of the Interior is ample to determine the "limitations, charges, terms, and conditions provided in the act," and that charges for maintenance, together with the time of their commencement, are the subject of reasonable regulation, as well as charges for construction, in all cases unless otherwise provided, I am of opinion that the Secretary has the right to exact the payment you refer to.

Very respectfully,

GEO. W. WICKERSHAM,
Attorney General.

JUNE 9, 1909.

The honorable the SECRETARY OF AGRICULTURE.

SIR: Your instructions of May 22 for my advice in relation to the proposed contract between the Truckee River General Electric Co. and the Reclamation Service, transmitted to you by letter of the Secretary of the Interior, dated May —, 1909, have been called to my attention on my return to Washington. The papers do not clearly show the purpose or effect of the proposed transaction, but, from scrutiny of them and from the results of informal inquiry at the Reclamation Service, it seems that two physical changes in the outlet of Lake Tahoe are contemplated:

First. Improved dam and outlet gates where the lake discharges into the Truckee River.

Second. A tunnel which will afford artificial outlet by an entirely different route.

The improved dam and gates at the natural outlet will make possible a much larger discharge than is now possible, so that floods occurring when the lake is full can be safely and immediately discharged into the river. This can not now be done, and therefore as a measure of safety the lake is not allowed to fill up, and much water is wasted that would be saved by the new dam and gates at the natural outlet.

The artificial outlet (tunnel) will furnish much more power (because of the more rapid and more available fall below the mouth of the tunnel) than is now developed by the company from a flow of 500 cubic feet per second at the power plants on the river between the lake and the point where the artificial outlet will discharge into the river.

The company owns the land and the present works at the natural outlet, and will construct and own the proposed new works there, but these works will be operated by and at the expense of the United States in such manner as to give the company the 500 cubic feet per second flow necessary for the operation of the five power plants above mentioned until the new outlet, tunnel, and plant are ready for operation.

The company will construct the tunnel and other works needed for the new outlet, and will be given in perpetuity the right to use the flow thereof for power purposes and to acquire certain reservoir sites in or partly in the National Forests for such purposes. There is no express provision that the old power sites are to be relinquished when these new ones are acquired. The provision is that when the company shall relieve the Government from its "guarantee" to furnish the amounts now required for the existing plants on the Truckee River and shall assume the responsibility of satisfying all vested rights on the river above Clarks Station (which is above the head of the reclamation canal), then the Government agrees to deliver water to it at the new outlet. No information is furnished as to the comparative producing capacity and value of the old and new power sites. There is no provision for the conveyance to the United States of the dam, gates, and riparian lands at the natural outlet. The contract does not specify where the artificial outlet is to be constructed. No information is given as to the exact location of the five power plants now operated by the company, as to whether they are situated upon public or private lands, nor, if upon public lands, as to the title by which the company claims them, but the use of the word "factories" to describe them in the contract suggests the question whether they are claimed as rights of way under the act of July 26, 1866 (Rev. Stat., sec. 2339). It is doubtful whether the benefits of that act extend to hydroelectric power companies generating electric power for sale.

The National Forest does not include the lake itself, but surrounds it on three sides and comprises the greater part of its watershed. The natural outlet and the proposed artificial outlet are within the National Forest, though the former is on private land. It is informally stated that the latter will also be entirely on private land, but the contract does not so specify.

Section 7 of the contract permits the location of the power plant or plants, with appurtenances and connections, upon land "owned or controlled by the United States," and provides for free use of such land "to carry pipes, tracks, and roadways, to place poles, and to run wires under ground or overhead," etc. This language seems to authorize the location of transmission lines through the National Forest lands.

In order to satisfy the vested rights on the Truckee River above the head of the Truckee-Carson irrigation canal, it is evidently the intention to authorize the company to obtain a supplementary supply of water by storage on tributaries of the Truckee not connected with Lake Tahoe and within the exterior boundaries of the National Forest. It also appears to be contemplated that the company may erect power plants on these tributaries, subject only to the terms of this contract.

The contract, therefore, undoubtedly contemplates the use of national-forest lands for storage and power purposes, but how much is left entirely indeterminate. It apparently proposes to give the company these rights in perpetuity. I am unable to find any authority under which the Secretary of the Interior can bind the United States by this perpetual contract. No provisions of the reclamation act of June 17, 1902 (32 Stat., 388), are referred to in this connection, and I have been unable to find any language giving him such authority. I am advised that the only statutes under which rights of way over the public lands and in the national forests for the generation of electric power for general purposes of commercial sale, can be acquired are the act of May 14, 1896 (29 Stat., 120), amending the act of January 21, 1895, and the act of February 15, 1901 (31 Stat., 790). These acts provide for the granting of a mere permission or license for use, and do not involve the title to the land. The latter act is regarded for purposes of administration as superseding the former. By the forest transfer act of February 1, 1905 (33 Stat., 628), and the agreement made thereunder between the Department of the Interior and the Department of Agriculture, permits for rights of way under the act of February 15, 1901, within national forests, fall within the jurisdiction of the Secretary of Agriculture.

It is not believed that any perpetual rights can be granted under this act. The last clause reads as follows:

> *And provided further*, That any permission given by the Secretary of the Interior (now the Secretary of Agriculture) under the provisions of this act may be revoked by him or his successor, in his discretion, and shall not be held to confer any right, or easement, or interest in, to, or over any public land, reservation, or park.

In granting permits to electric power companies under this statute, the Forest Service has entered into contracts covering periods of 50 years at the utmost, and even as to these it is not supposed that the power of revocation is legally taken away.

I am of the opinion that full and specific information should be obtained as to the comparative value of the rights proposed to be given through this contract by the United States to the company, and by the company to the United States, and that a field examination be undertaken for this purpose and to ascertain whether the proposed contract would not give the company a practical monopoly of power in this region. The Forest Service has available for such an examination the services of an able hydraulic engineer, who is now within easy reach of Lake Tahoe. I think that the contract should be redrawn in such manner as to show clearly and definitely the transaction proposed and the mutual advantages to be derived from it by the respective parties; that the power rights to be acquired by the company should be permitted by the Secretary of Agriculture under the act of February 15, 1901, and that in the permit a specific time limitation be incorporated, together with the other conditions usually imposed in power permits. It is of the first importance that no rights be granted in perpetuity for the exploitation of the power resources now in the control of the Nation, and that no claim as to such rights hitherto asserted or acquired without authority of law be acquiesced in or validated.

I return the inclosures contained in your letter of May 22, and also send you a general form of contract employed by the Forest Service in dealing with the hydroelectric power companies.

Very respectfully,

GIFFORD PINCHOT,
Forester.

[Memorandum for Mr. Wells.]

JUNE 10, 1909.

The Truckee River General Electric Co. has a capital of $3,000,000. Until recently a majority of the stock was owned and controlled by the Fleischhackers, of San Francisco, M. Fleischhacker being president and H. Fleischhacker being first vice president.

Recently an option on the majority stock held by W. P. Hammon (probably of Oroville, Cal.) was exercised in favor of "Eastern parties." These parties are understood to be Stone & Webster, of Boston. Mr. Bien tells me that it was with them or their representative that the Reclamation Service dealt in making this contract.

I know W. P. Hammon. He is a large gold-dredging promoter and operator, and the last I knew of him his principal operations were in the Oroville field. He carried through a big deal by which several dredging companies there were consolidated and sold to an English syndicate. John Hayes Hammond got the English in. W. P. Hammon is also interested in the Quincy Mining and Water Co. in the Plumas National Forest.

All the dredges at Oroville are operated by electric power, and my impression is that it comes from a plant on the American River, just over the crest of the Sierras from Lake Tahoe. This plant on the American River is, or was, controlled by the Fleischhackers.

It seems possible that both projects may ultimately have to do with the Harriman scheme to electrify the Southern Pacific Railway Co. over the mountains. This is only my guess.

W. W. DYAR.

[Tahoe National Forest, California and Nevada. (Fourth Proclamation.) No. 870.]

JUNE 10, 1909.

A PROCLAMATION BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

Whereas an Executive order dated July second, nineteen hundred and eight consolidated portions of the Tahoe, Stanislaus, and Plumas National Forests under the name of the Tahoe National Forest;

And whereas it appears that the public good will be promoted by adding to the Tahoe National Forest certain lands within the States of California and Nevada which are in part covered with timber;

Now, therefore, I, Theodore Roosevelt, President of the United States of America, by virtue of the power in me vested by the act of Congress approved June fourth, eighteen hundred and ninety-seven, entitled "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and ninety-eight, and for other purposes," do proclaim that the Tahoe National Forest is hereby enlarged and that its boundaries are as shown on the diagram forming a part hereof.

The withdrawal made by this proclamation shall, as to all lands which are at this date legally appropriated under the public-land laws or reserved for any public purpose, be subject to, and shall not interfere with or defeat legal rights under such appropriation, nor prevent the use for such public purpose of lands so reserved, so long as such appropriation is legally maintained or such reservation remains in force.

This proclamation shall not prevent the settlement and entry of any lands heretofore opened to settlement and entry under the act of Congress approved June eleventh, nineteen hundred and six, entitled "An act to provide for the entry of agricultural lands within forest reserves."

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this second day of March, in the year of our Lord one thousand nine hundred and nine, and of the Independence of the United States the one hundred and thirty-third.

[SEAL.] THEODORE ROOSEVELT.

By the President.
ROBERT BACON,
Secretary of State.

[Telegram.]

WASHINGTON, D. C., *June 12, 1909.*

GIFFORD PINCHOT,
Care J. R. Garfield,
West Mentor, Ohio:

Letter to Secretary regarding proposed use Lake Tahoe, Reclamation Service, mailed you for signature 9th. Important you sign and return or Interior will probably act before letter is received.

PRICE.

[Telegram.]

MENTOR, OHIO, *June 12.*

PRICE, *Forestry, Washington, D. C.:*

Let. not received. Will make inquiry and sign when found.

PINCHOT.

JUNE 15, 1909.

The honorable the SECRETARY OF THE INTERIOR.

SIR: In order to expedite the consideration of the proposed contract between the Truckee River General Electric Co. and the Reclamation Service of your department, transmitted with your letter of May 20, I placed in your hands this morning the report of the Forester upon this contract, dated June 9. I am now writing to indorse in every particular the views expressed by the Forester with regard to the proposed contract in order that my objection to it upon these grounds may be of official record in your department. I have the honor to be, sir,

Very respectfully, your obedient servant,

JAMES WILSON, *Secretary.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES RECLAMATION SERVICE,
OFFICE OF THE DIRECTOR,
Washington, D. C., June 15, 1909.

Mr. OVERTON PRICE,
Acting Forester, Forest Service, Washington, D. C.

DEAR SIR: Some time ago the Secretary of the Interior sent to the Secretary of Agriculture a draft of proposed contract[1] regarding the control of the waters of Lake Tahoe. Since that time there have been a number of discussions of the matter and the contract has been radically amended, as shown by the accompanying copy. It is exceedingly important to us to have a definite agreement reached at as early a date as practicable, and I hope that the changes as now made will meet the objections which have previously been entertained.

Kindly have this copy studied, and, if possible, formulate any objections, so that we can consider them informally at a meeting at 10 a. m. on Wednesday, June 16.

Very truly, yours, F. D. NEWELL, *Director.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES RECLAMATION SERVICE,
OFFICE OF THE DIRECTOR,
Washington, D. C., June 24, 1909.

Mr. A. C. SHAW, *Forest Service.*

DEAR SIR: In compliance with my promise to you of yesterday I send under another cover blue print showing Lake Tahoe, Washoe reservoir, the line of proposed tunnel, and other information in connection with the Lake Tahoe contract regarding storage for the Truckee-Carson project, Nevada.

Very truly, yours, MORRIS BIEN,
Supervising Engineer.

JUNE 28, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR OLMSTED: I inclose two copies of a proposed agreement between the Truckee River General Electric Co. and the United States. The first copy is marked "Original draft," and the second is marked "Substitute draft." I also inclose a copy of a letter of the Secretary of the Interior, dated May —, concerning the original agreement, and a copy of the Forester's letter of June 9 to the Secretary of Agriculture reporting upon this agreement. I have indicated on the plat of the National Forest the location of the proposed tunnel between Lake Tahoe and Washoe Reservoir. I also inclose a copy of the letter of the Secretary of Agriculture, dated June 15, indorsing the Forester's report. In consequence of the Forester's letter of June 9 and the Secretary's letter of June 15 the Secretary of the Interior prepared the substitute draft. He has submitted this to Mr. Wallace, representative of the Truckee River General Electric Co., for execution by the company. I am informally told that this agreement will probably be submitted to Secretary Ballinger upon the ground at Lake Tahoe in the near future, and that he will probably sign it.

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[1] See p. 60.

I inclose a copy of a memorandum of June 10, signed by Mr. Dyar, and a copy of a map prepared by the Director of the Reclamation Service, which shows the proposed tunnel and how the level of Washoe Reservoir is to be raised. You will see by referring to paragraphs 4 and 9, pages 4 and 10, respectively, that the agreement proposes to bind the United States to care perpetually for the outlet works on Lake Tahoe, and proposes to allow the Truckee River General Electric Co. to use all of the power in the flood waters of Lake Tahoe, which the agreement says have been appropriated by the United States. The purpose of the proposed tunnel is to divert such flood waters and turn them into the irrigation project after they leave Washoe Reservoir; but to take the power from the Washoe Reservoir and carry it to Floriston and other places named in the contract to satisfy the vested rights in the waters which are now being taken from Lake Tahoe down Truckee River, it will be necessary to cross forest lands.

The agreement further proposes, in paragraph 7, page 8, to allow the company to flood other lands of the United States to secure water and power to satisfy the vested rights along Truckee River. If it builds the tunnels and satisfies the vested rights by constructing reservoirs on the tributaries to the Truckee River it will largely increase the amount of power in that vicinity, and since this power will all have to cross the forest, it is all protected by the forest. Some of it has probably not been appropriated by the company, and I fear that the public interests will suffer, since it seems probable the company will not surrender rights or perform acts which fairly compensate the United States. The phrase "in accordance with and subject to the laws of the United States," which appears, and which I have underscored with pencil, in paragraph 7, pages 8 and 9, is alleged by officials of the Department of the Interior to have been inserted for the purpose of expressing an intention not to bind the United States to allow any rights of way across forest lands, except upon permission of the Secretary of Agriculture or the Forester, and the same purpose is given for the insertion of the proviso on page 8, also marked in pencil. I understand informally that the company insisted upon this insertion, and I can see no purpose in it, unless it is that the company supposes that the power in the surplus waters of Lake Tahoe and the power in the water of the tributaries of Truckee River may be disposed of by the Secretary of the Interior in accordance with section 5 of the act of April 16, 1906 (34 Stat., 117). The contract seems to contemplate a permanent right, whereas the act only provides for a lease for 10 years. Nevertheless, I am of the opinion that the company is endeavoring to secure some equities under this act.

The Forest Service feels that the indefinite character of the agreement is another objection to it, and it feels that the execution of it should be delayed until the service has full information as to the effect of the agreement. The Reclamation Service claims that there is no vacant land on the margin of Lake Tahoe. Please institute at the earliest possible moment a thorough field examination to ascertain the comparative value of the rights proposed to be surrendered by the United States under the proposed contract and the rights to be surrendered by the company; and also whether the contract would tend to make a monopoly of power in that region successful. If Mr. Maltby is available, I think you should use him for this investigation, and should let your engineer assist him. You should feel free to ask local reclamation officials for any information as to the flow of streams, appropriation of water, or other matters. Please let me know as soon as possible about when the report may be expected.

Please return the blue print with your report.

Very sincerely, yours,

OVERTON W. PRICE,
Associate Forester.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., July 13, 1909.

OLMSTED, *San Francisco, Cal.:*

Do not know that Secretary of Interior has approved new contract Truckee General Electric Co. Understand he contemplated examination on ground prior to approval. Please investigate fully, as suggested by letter June 8. Write or wire any suggestion. Letter fully explaining situation follows.

SHAW.

[Telegram.]

SAN FRANCISCO, CAL., *July 13, 1909.*

PINCHOT,
Forest Service, Washington, D. C.:

Has Secretary of Interior already approved new contract Truckee General Electric Co.?

OLMSTED.

(Personal.) JULY 14, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR OLMSTED: Your telegram of July 13 is received. A reply was sent you yesterday. I understand that the Secretary of the Interior intended, when he left Washington about June 25, to visit Lake Tahoe, and, if conditions found by him showed no reason for a modification of the new contract, that it was his intention that the instrument should be executed by the applicant and himself in the field. I do not know what has been done.

The position taken by the Department of the Interior is, I believe, that the proposed new agreement grants no rights upon the forest, and that it is not necessary to submit it to the Department of Agriculture for further consideration. For this reason I do not feel that it is necessary or proper for the Forest Service to inquire at the Department of the Interior to learn whether the agreement has really been executed. If it is executed, and the company should undertake to assert any rights upon the forest, it would then become incumbent upon the Forest Service to act. In the meantime I wish to secure all information possible which may concern the permit. If your examination develops any proof which shows that the action contemplated by the Department of the Interior jeopardizes public interests, of course the Secretary would probably feel it his duty to call it to the attention of the Secretary of the Interior.

Very sincerely, yours,

OVERTON W. PRICE,
Associate Forester.

Our position is just this: The Secretary has formally protested against the proposed contract, and we will stand by that protest, and enforce it, too, if the need arises.

[Telegram.]

SAN FRANCISCO, CAL., *July 15, 1909.*

FORESTER, *Washington, D. C.:*

Am somewhat familiar with Lake Tahoe region and have carefully studied proposed agreement with the Truckee General Electric Co. Think it would be mistake to close matter until time is given to go into it full agreement. Is contrary to the Government policy in dealing with power. Matter important and valuable privileges are granted for apparently little return to the Government. Blanket permits covering wide extent of territory granting five years in which to select reservoir sites and location for power plants, to be held thereafter in perpetuity, should in no case be given. Field examinations can not be made until plans of the company are revealed, which is not required for five years. No agreement should be made that does not designate the location of all works. I expect to go to Tahoe on another matter 25th. As to whether the agreement would tend toward creating a power monopoly in that region, certainly no other concern could enter the field during the life of the blanket permit, and it would be unusual if the company overlooks any location of value during the five years in which it has to make selections.

A. W. MALTBY.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., July 16, 1909.

OLMSTED, *San Francisco, Cal.:*

Maltby's telegram 15th received. Suggest he examine generally watersheds Truckee River and Lake Tahoe in national forest likely to be affected by section 7 proposed agreement. Probably impossible to secure delay. All information which may be secured by general, hasty, but reasonably thorough examination desired to show extent of unappropriated waters likely to be affected by section 7, and of forest lands likely to be used in connection with power development under section 7. Would also appreciate any other information gained from field examination to show how proposed agreement affects rights of United States and company.

PRICE.

[Telegram.]

SAN FRANCISCO, CAL., *July 17, 1909.*

PRICE,
Forest Service, Washington, D. C.:

If practicable, please obtain and forward from Reclamation Service copies correspondence and any tentative contracts power companies at time Truckee-Carson reclamation project was approved.

OLMSTED.

[Telegram.]

SAN FRANCISCO, CAL., *July 17, 1909.*

FORESTER, *Washington, D. C.:*

Merrill leaves to-day for Tahoe to consult project engineer and make general field examination proposed Truckee General Electric contract. Maltby will follow within week, and I leave for Nevada City Tuesday. Further consideration·proposed. Contract indicates extremely bad situation. Please use every effort postpone action Washington.

OLMSTED.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., July 19, 1909.

OLMSTED, *San Francisco, Cal.:*

Impracticable to secure papers of suspension suggested in your telegrams July 17. Letter follows.

A. C. SHAW.

[Telegram.]

PORTLAND, OREG., *July 19, 1909.*

FORESTER, *Washington, D. C.:*

Can Maltby be assigned immediately this district two weeks. Detail extremely important.

CECIL.

JULY 19, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR MR. OLMSTED: Since the Secretary of Agriculture has made a report to the Secretary of the Interior, which he has neither followed nor acknowledged as yet, I do not believe it would be advisable to submit to him through the Interior Department the request mentioned in your telegrams.

Very sincerely, yours, A. C. SHAW,
Acting Law Officer.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., July 20, 1909.

ALLEN, *Portland, Oreg.:*

Maltby on special assignment forester in district 5. Impossible assign him district 6 near future. Please write particulars of work.

SHAW.

[Telegram.]

SAN FRANCISCO, CAL., *July 26, 1909.*

FORESTER, *Washington, D. C.:*

Reported here Truckee General Electric contract was signed three weeks ago. Work on the ground would indicate this is true. Copy we have is so loosely drawn would seem it must be only a rough draft. Can a copy of the agreement as signed be obtained? It may give more definite information as to company's proposed uses in Tahoe National Forest.

A. W. MALTBY.

JULY 27, 1909.

The SECRETARY OF THE INTERIOR.

SIR: In my letter to you, dated June 15, I formally indorsed the views and objections expressed by the Forester in his report to me, dated June 9, upon the proposed contract between the Department of the Interior and the Truckee River General Electric Co. Since the contract as originally drawn involves certain national forest interests, I have the honor to request that I be informed concerning the action taken or proposed in your department and whether the contract has been changed so as not to affect national forest interests. To this end, if action has been taken, or is definitely contemplated, looking to the execution of a contract with the company, I should be glad to receive a copy of such contract, if compatible with the public interests.

I have the honor to be, sir, very respectfully, your obedient servant.

JAMES WILSON, *Secretary.*

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, July 27, 1909.

A. W. MALTBY,
Care District Forester, San Francisco, Cal.:

Tahoe contract will probably be signed Secretary Interior to-day. Copy your hands probably correct, but will mail you copy contract as signed soon as obtainable. Please wire fully your present conclusions regarding proposed contract as basis for our action here. As further investigation develops new facts, please report fully and promptly.

OVERTON W. PRICE.

[Telegram.]

SAN FRANCISCO, CAL., *July 28, 1909.*

FORESTER, *Washington, D. C.:*

Use of forest lands does not seem absolutely necessary to carrying out contract with Truckee General Electric Co. Assuming control and rights heretofore held by the company at Tahoe-Truckee River outlet based on good title and unassailable, then under paragrah 4 the Government will secure increased water for irrigation purposes probably up to the estimate of 200,000 acre-feet, but paragraph 5 seems to nullify this as I interpret it, requiring only that same amount of water to be available for irrigation purposes at Clark Station as of the date of signing contract. If this is correct, the Government would lose the advantage gained through control and operation present Tahoe-Truckee outlet. Since returning from Tahoe, see no reason change views my telegram July 15. Contract is unusual, no plans being required, and owing to this and the vague and loose manner in which contract is drawn it is difficult to determine the outcome. If the company avails itself of the rights granted in paragraph 5 and subsequent paragraphs, would seem no more water would be available for irrigation purposes than heretofore.

A. W. MALTBY.

JULY 29, 1909.

[Memorandum for Mr. Price.]

By letter dated May 19, 1909, the Secretary of the Interior submitted to the Secretary of Agriculture a proposed agreement between the Truckee River General Electric Co. and the Department of the Interior, under which the company might rebuild the outlet gates from Lake Tahoe into Truckee River and might construct a tunnel from Lake Tahoe to Washoe Reservoir. The purpose for rebuilding the outlet dam into Truckee River is to make possible a larger discharge, so that floods occurring when the lake is full can be more quickly discharged into the river. The object of the tunnel is said to be the development of additional power and the avoidance of waste by irrigators around Reno.

On June 15 the Secretary approved a report dated June 9 from the Forester to the Secretary of Agriculture, in which the Forester said that he found the following objections to the proposed agreement:

1. That it undertook to give to the company, in perpetuity, the right to take the flow of water from the tunnel across national-forest lands and to acquire certain reservoir sites in or partly in national forests for power purposes, in perpetuity.

2. That while providing for new power sites it made no provision for the relinquishment of old power sites to the Government.

3. That the agreement did not specify the location of the new outlet from Lake Tahoe into the tunnel, nor the exact location of the five power plants now operated by the company.

4. That section 7 seemed to authorize the location of transmission lines through national forest lands and the erection of power plants within the National Forests on Truckee River and its tributaries and to grant such rights in perpetuity. The Forester expressed the opinion that no law authorized such perpetual grant.

5. That the agreement purposes to bind the United States to care perpetually for the outlet works on Lake Tahoe and to allow the company to use all of the power in the flood waters of Lake Tahoe which the agreement says have been appropriated by the United States.

After receiving the Forester's objections and the Secretary's indorsement thereof, the agreement was changed in the Department of the Interior by inserting, in paragraph 7, "In accordance with and subject to the laws of the United States," apparently limiting the agreement on the part of the United States that the company shall build dams and overflow lands in the United States in the watersheds of Lake Tahoe and the Truckee River to create water storage to satisfy vested rights on the Truckee River, and also apparently limiting the agreement on the part of the United States that the company should have the right to carry across Government lands any such watersheds, pipes, tracks, and railways, and to place thereon poles and to run therefrom wires underground or overhead, as may be necessary for the operation and maintenance of such plants as are built by the company to utilize the flood waters to be diverted by the tunnel.

A clause was also added to paragraph 7 requiring that all maps of location on public lands within National Forests shall be subject to the approval of the Secretary of Agriculture and shall not be exercised until such approval.

The Forest Service believes that the insertion of these phrases and the addition to the paragraph referred to were sought by the company as a basis for the contention that it might gain some rights in accordance with the act of April 16, 1906 (34 Stat., 117), although that act only contemplated a lease for 10 years, whereas the agreement contemplates a permanent right.

The Forest Service also believes that before an agreement is signed, an investigation should be made to ascertain: (1) The relative value of the rights secured to the company and to the United States under it should be ascertained with some degree of accuracy. (2) Whether the company is securing a monopoly of water power in a region where there is a great demand for such power for mining, railroad, and other purposes. The service also believes that the agreement should be more definite in its terms, to remove the cloud which the contract apparently puts on all reservoir sites and power-site locations on the watersheds of the Truckee River and its tributaries and on the watersheds of Lake Tahoe.

Although paragraph 4 of the contract seems intended to secure the use of increased flood water by the United States for irrigation in connection with the Truckee-Carson project, paragraph 5 allows the diversion by the company after the erection of the improvements by which such flood waters are to be stored, and possibly only binds the company to return to the Truckee River above the Truckee-Carson project intake only the original amount of water which reached that point before the erection of improvements by which the flood waters are to be stored.

Mr. W. P. Hammon, a member of the corporation organized to take over the rights under the proposed contract, was largely interested with H. H. Yard in the most extensive attempt yet made in the United States to secure possession of timber lands by fraudulent use of mining locations, and he is largely interested in developed and undeveloped California water powers on the public lands.

Mr. ——— Bowen, reported to be connected with the company formed to take over the rights under this contract, is similarly interested in securing water rights on public lands in California by methods which have aroused vigorous opposition and complaint in the localities in which he is operating.

The uncontrolled monopoly thus proposed to be assured by the Government to the Truckee River General Electric Co. is:

1. In direct violation of the established policy concerning water power.

2. In violation of the right of the Secretary of Agriculture, and against his official protest, to control the use of land within the boundary of land within National Forests.

3. In violation of the spirit of the ruling of the Attorney General that cooperative assistance for the construction of irrigation works is not legal, in direct promotion of a well known and widely resented attempt by members of this corporation to fasten an oppressive monopoly of water power upon the inhabitants of the region.

4. Relief from one-half the cost of a new dam, estimated by the Secretary of the Interior at $25,000.

5. Relief from liability for damages covered by terms of contract, estimated by the Secretary of the Interior at $10,000.

6. Water estimated by the Secretary of the Interior as sufficient to irrigate 70,000 to 80,000 acres, which water already appropriated by the United States could be made available with equal certainty by the condemnation of the 54 acres of land and the dam.

The company gets—

1. The right to new power development produced by water already appropriated by the Reclamation Service, estimated by the Secretary of the Interior to develop 30,000 horsepower and reported to reach 200,000.

2. The right to select at any time during five years any or all reservoir sites and rights of way for flumes, ditches, tunnels, transmission lines on the public lands within the watersheds of Lake Tahoe and Truckee River, vested rights to an amount not stated, free from any requirement for the surrender of such rights to the United States.

3. Therefore a monopoly of water power developed from the very important watersheds of Lake Tahoe.
4. Perpetual control of this monopoly, practically without charge, entirely without annual compensation and in perpetuity, in direct opposition to the established policy of the United States regarding water powers.
5. Perpetual protection of headwaters and sources from which this power is derived.

DEPARTMENT OF THE INTERIOR,
Washington, July 30, 1909.

The SECRETARY OF AGRICULTURE.

SIR: Replying to your letter of July 27, 1909, I have the honor to inclose herewith copy of proposed contract between the Truckee River General Electric Co. and the Reclamation Service, Department of the Interior.

Very respectfully,

FRANK PIERCE,
Acting Secretary.

This agreement, made this thirteenth day of May, 1909, by and between the Truckee River General Electric Company, a corporation organized and existing in the State of California, its successors and assigns, party of the first part, hereinafter styled the "Company," and the United States, acting in this behalf by ——— ———, Director of the United States Reclamation Service, and subject to the approval of the Secretary of the Interior, party of the second part, witnesseth:

Whereas the Company claims title to a tract approximately fifty-four acres in the State of California at the outlet of Lake Tahoe into Truckee River, together with the dam now constructed upon said premises near the head of Truckee River and the tenements, hereditaments, appurtenances, and easements thereunto belonging, and by means of said dam now regulates the flow of waters so as to be available for use in the operation of several plants and factories on Truckee River hereinafter mentioned; and

Whereas the United States desires to utilize the waters stored in Lake Tahoe in connection with the Truckee-Carson project in Nevada, constructed under the provisions of the act of Congress approved June 17, 1902 (32 Stat., 388), known as the reclamation act, and claims under appropriations made by it or on its behalf the unappropriated and surplus waters of Lake Tahoe and the Truckee River for irrigation and other uses in connection with said Truckee-Carson project, and in this connection has also reserved the public lands along the shores of Lake Tahoe and in the immediate vicinity; and

Whereas the parties hereto now desire to provide for the utilization of all the waters of Lake Tahoe and of the Truckee River for irrigation and power purposes in such manner as to protect all vested rights to the use thereof for such purposes, and also to avoid waste of any such waters, so far as may be practicable, and generally to cooperate to the fullest extent for the beneficial utilization of the waters of Lake Tahoe; and

Whereas it is claimed by the Company that the said lands aggregating approximately fifty-four acres and the dam thereon and rights appurtenant thereto at the outlet of Lake Tahoe into Truckee River were acquired, and are now held and have for a long time been held or controlled by the Company for the purpose of controlling and regulating the flow of water from Lake Tahoe down the Truckee River, where such water is used in the operation of five certain power plants or factories located upon the banks of said river and extending from Floriston, in California, to a point at or near Reno, in Nevada.

The said power plants or factories are of the description and character set forth in the following schedule:

Name.	Location.	Diversion capacity.
		Cubic feet per second.
Floriston Pulp & Paper Co	Floriston	400
Truckee River General Electric Co	Farad	400
Truckee River General Electric Co	Fleish	300
Washoe Power & Development Co	Mogul	300
Reno Power, Light & Water Co	Reno	300

Therefore the said parties hereto agree:

1. It is agreed and understood that the amounts of water above specified are sufficient for all of said plants and factories, the same waters being used successively by each of them as such waters pass down the said river.

2. It is further understood and agreed that in order that the flow of said waters shall continue to be available for use in the operation of said plants it is necessary that the gates of the dam at the lake outlet should be so manipulated that the flow of the Truckee River at Floriston, in the State of California, shall not be less than 500 cubic feet per second from the first day of March to the thirtieth day of September, inclusive, in each year, and not less than 400 cubic feet per second from the first day of October to the last day of February, inclusive, in each year, and so that the lake elevation on the first day of October shall be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December.

3. In order that there shall be secured to the United States for the irrigation and other uses of the Truckee-Carson project all the water supply available by storage in Lake Tahoe, subject only to the conditions of flow and the other conditions herein in this agreement fixed by the parties, the Company covenants and agrees forthwith to reconstruct its said dam at Lake Tahoe and to build new outlet works in connection therewith; also gatekeeper's buildings, and perform the necessary dredging in accordance with plans to be approved by the Director of the Reclamation Service and to push such construction to completion at the earliest date practicable, and to complete the same or such parts thereof as the Director of the Reclamation Service may require on or before November 1, 1909. Prior to November 1, 1909, such changes in the bridges, grade, and track

of the Lake Tahoe Railway and Transportation Company as may be necessary for the discharge of twenty-five hundred cubic feet of water per second down the Truckee River without damage to the railroad shall be provided and the expense thereof shall be borne by the Company; and until such changes are made the Company shall be responsible for all damage to lands or property on the margin of Lake Tahoe or along the Truckee River, and the Company agrees that it will secure the full consent of the Lake Tahoe Railway and Transportation Company for the doing of such work. The Company shall not be required to do any work of construction or reconstruction of the dam and outlet works which will affect vested rights in respect to the waters of Lake Tahoe and Truckee River as the same now exist, or which will subject it to claims for damage or injury in respect thereof.

4. The Company agrees that, subject to the conditions of flow and the other terms and conditions of this agreement, the United States, commencing on the first day of November, 1909, shall have the actual and exclusive control and operation of said dam and outlet works, and the proper officers and agents of the United States shall at all times have unrestricted access to the premises and the right to use the same and the buildings and works thereon for the purposes of such control and operation. The United States covenants and agrees that after assuming control hereunder it will at all times properly provide for such control and operation under the terms of this agreement and will pay all the cost and expense of the same. In the operation of said works for the control of the outflow of Lake Tahoe the United States covenants and agrees to so manipulate the gates of the dam at the lake outlet that the flow of the Truckee River at Floriston, in the State of California, shall not be less than 500 cubic feet per second from the first day of March to the thirtieth day of September, inclusive, of each year, and not less than 400 cubic feet per second from the first day of October to the last day of February, inclusive, in each year, and so that the lake elevation on the first day of October shall be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December. Subject to the aforesaid conditions of flow and lake level and subject to the rights of the Company and other owners to maintain and operate at all times their respective plants and factories (as aforesaid) and subject to the vested rights in Lake Tahoe and in the Truckee River, the United States in the operation of said outlet works shall have and may exercise the exclusive right to regulate the flow of water through said works in such manner as may be deemed best by the United States to secure for its use in the Truckee-Carson project for irrigation and other purposes all the water supply available by storage in Lake Tahoe. The Company agrees that after July 1, 1909, and prior to turning over the exclusive control of the dam and outlet works of Lake Tahoe to the United States, the Company will operate the gates for the discharge of water into Truckee River according to such schedule, not inconsistent with the terms of this contract, as may be furnished by or under authority of the Director of the Reclamation Service.

5. Whenever the Company shall relieve the United States from its agreement to operate the outlet works so as to deliver water in the

manner and in the amount as hereinbefore specified from Lake Tahoe to the power plants on the Truckee River, and the Company shall to the satisfaction of the Secretary of the Interior assume the liability for and the responsibility of protecting and satisfying vested rights of all kinds on the Truckee River above Clarks Station on the Southern Pacific Railroad, said station being situated above the head of the canal constructed by the United States, and shall have made adequate provision to protect and satisfy all (riparian) vested and other rights to the satisfaction of the Secretary of the Interior, then the United States agrees that said Company shall, subject to the provisos hereof, be entitled to divert water for power purposes at a point, hereinafter styled the second diversion, to be selected by the Company on the margin of Lake Tahoe, and if on public land to be subject to approval by the Secretary of the Interior, not higher than the natural outlet of said lake, and without charge other than the stipulations of this agreement; provided that the regulation of the discharge through the outlet from Lake Tahoe at point of second diversion and the control and operation of any storage reservoirs built by the company to store waters therefrom for the use and benefit of the Truckee-Carson project shall be by the United States acting directly through its agents, the control of the United States of outlet works of such storage reservoirs to be in like manner as provided in paragraph 4 for control of the outlet works from Lake Tahoe into Truckee River, the United States agreeing that the control of outlets from such storage reservoirs shall be such as to avoid so far as possible all waste of water; provided further that the Company shall not draw water in excess of 475 acre-feet in any one civil day when such draft is prohibited by the Director of the Reclamation Service; and provided further that in case of such second diversion a sufficient quantity of water shall, by storage or other means to be provided by the Company, be delivered to the Truckee River at or above the place of diversion for said Truckee-Carson project near Clarks Station in such manner that the second diversion shall not have the effect of diminishing the quantity of water flowing in said Truckee River near Clarks Station, and which would be available for the use of the said Truckee-Carson project in case no such second diversion for power purposes from Lake Tahoe were made or storage additional to Lake Tahoe were provided. In the event of such diversion, all storage works built by the Company for the use and benefit of said Truckee-Carson project shall be subject to approval, both as to design and construction, by the Director of the Reclamation Service. In order that the Company shall enjoy the full benefit of any such second diversion the United States agrees when such second diversion is made that, subject to performance and satisfaction by the Company of the conditions of this paragraph, the United States will so control the outlet works of Lake Tahoe into the Truckee River that such second diversion can be utilized, and so that there will not be a greater discharge of the waters of the lake into the Truckee River than is necessary to prevent damage from high water in Lake Tahoe or to satisfy rights on the river not otherwise provided for.

6. The Company and its assigns, in case of such diversion, shall have the exclusive right to use the waters delivered and diverted in pursuance of paragraph 5 for such power purposes as it or they

may desire at any point or points before such diverted waters are taken into the Truckee-Carson canal by the United States at the headworks near Clarks Station, but in such manner that subject to the terms hereof respecting the flow above specified there shall be no unnecessary waste of water available for the Truckee-Carson project.

7. The United States agrees that the Company, in accordance with and subject to the laws of the United States, shall have the right to build dams and overflow such lands belonging to or controlled by the United States in the watersheds of Lake Tahoe and the Truckee River as may be necessary for the purpose of creating water storage to satisfy vested rights on the Truckee River, and the Company shall file a designation of such places and lands with the Secretary of the Interior within five years from the date of this agreement, and shall build and complete all said works within five years of the date of the acceptance of each such designation, otherwise this stipulation, unless renewed in writing, shall by its own terms expire. The United States further agrees, in accordance with and subject to the laws of the United States, that the Company shall have the right to construct and properly maintain such power plant or plants, with appurtenances and connections, as the Company or its assigns from time to time may elect on land owned or controlled by the United States and as may be necessary to utilize the waters of Lake Tahoe and the Truckee River and tributaries below the outlet of Lake Tahoe in connection with the purposes of this agreement; provided, however, that all such plants shall be designated by a document in writing to be filed with the Secretary of the Interior within five years from the date hereof, and shall be completed within five years from the date of the acceptance of each such designation, otherwise this stipulation, unless renewed in writing, shall by its own terms expire, and shall also, in accordance with and subject to the laws of the United States, have the right of ingress or egress on such Government land and the right thereon to carry pipes, tracks, and roadways, to place poles, and to run wires underground or overhead as may be necessary in connection with the proper and satisfactory operation and maintenance of such plants as are built to utilize said water in case of such diversion.

Provided, however, that all maps of location on public lands within National Forests shall in each instance be subject to the approval of the Secretary of Agriculture, to be given in writing, and no such right shall be exercised until such written approval is given by said Secretary.

8. The United States covenants and agrees that after it assumes operation of the dam and outlet works hereunder and after the completion of the Lake Tahoe dam, outlet works, and railroad reconstructions as hereinbefore specified, it will protect and save harmless and indemnify the Company against all claims for damages to persons or property, including the dam and other property of the company, due to the operation of the dam and outlet works; but the United States shall not be held liable for damage to any property or interests below the outlet works resulting from a discharge of 2,500 cubic feet of water per second from Lake Tahoe into Truckee River. The Company agrees to hold the United States harmless against all claims

for damage due to the operation of the gates at the outlet prior to the completion of the said Lake Tahoe dam, outlet works, and railroad reconstruction.

9. The Company shall provide for all needful repairs and renewals of all its works which are under the control of the United States, and shall promptly provide for such repairs or renewals as may be deemed necessary by the Director of the Reclamation Service, and in case of failure to do so after due notice, such work may be done by the United States at the expense of the Company; provided that the cost of all repairs and renewals of any works or structures at the outlet from Lake Tahoe into Truckee River shall be borne equally by the Company and by the United States; provided further that the United States shall pay all expenses of operation of all works of the Company which are operated by the United States.

10. The United States shall not in any manner be liable for failure to maintain the flow of water specified in the several paragraphs of this agreement when such failure shall have been caused by extraordinary drought or other act of God or the public enemy or by unlawful interference; but it is agreed and understood that the United States shall have the right, subject to the specifications of flow herein made, to draw water from Lake Tahoe at any time and in such quantity as in the judgment of the Director of the Reclamation Service may be necessary to prevent damage to lands on the margin of Lake Tahoe, and in such case so much of said water shall be delivered to the Company as may be requested by it. It is also understood and agreed that, until completion of the new dam and other works by the Company, the flow of water down the Truckee River shall be subject to and dependent upon the capacity of the works now existing.

11. In further consideration of the stipulations and agreements of this contract the United States will pay to the Company, upon the completion of the dam, outlet works, gatekeeper's buildings, and required dredging at the outlet of Lake Tahoe, an amount equal to one-half the reasonable and necessary cost thereof, as determined by the director, and upon the completion of said works at the Tahoe outlet the United States will execute, without other rental charge than the stipulations hereof and upon conditions satisfactory to the Director of the Reclamation Service, a ten-year lease for the tract of land purchased by the United States from the Mercantile Trust Company, by deed dated August 9, 1904, and recorded in book 86 of deeds, at page 22, records of Placer County, California.

12. It is understood and agreed that the agreements on the part of the United States herein contained as to regulating and controlling the flow of water and as to delivery of water in case of diversion are the chief considerations moving the Company to execute this agreement, without which and confidence in the performance of which by the United States, this agreement would not be made. The control of the dam and works aforesaid is given to the United States for the purpose of fulfilling the said provisions of this agreement, and such control shall continue only so long as it shall be exercised in the fulfillment of such purposes. If at any time there be a dispute between the parties as to the application of this provision or the construction thereof or as to the rights of either party under the

same, such dispute shall be summarily decided by the Secretary of the Interior then in office, whose determination shall be final and conclusive upon both parties. No person, firm, or corporation other than the United States, and no assign of the United States, whether by statute or otherwise, shall have any right to regulate or control the outlet works of the Company under this agreement. This agreement shall inure to the benefit of and bind the successors and assigns of the Company as well as the Company itself.

13. This agreement shall not operate to bind the United States until it shall have been approved by the Secretary of the Interior, whose approval or disapproval will be signified within thirty days from receipt of copy hereof duly executed by the Company.

14. It is understood and agreed that the United States does not undertake to become responsible for any but its own acts nor to convey any right to the Company not now possessed by the United States nor which the Secretary of the Interior has not in law the right to convey, and that nothing in this contract shall be construed as impairing or affecting or requiring the United States to impair or affect the rights of any person, corporation, or interest not a party to this contract; provided, however, that nothing herein contained shall prevent the United States from acquiring on its own behalf, by adverse user or otherwise, the right to the use of any of the waters mentioned or referred to herein for irrigation and other purposes in connection with the Truckee-Carson project.

15. It is also understood and agreed that if the law of the United States should be changed in any respect so that the Director of the Reclamation Service shall not exercise the powers now exercised by him, or if said office shall be abolished, then all the powers and privileges to be exercised by the Director of the Reclamation Service shall be exercised by the Secretary of the Interior or by such officer as may be designated by him.

16. No Member of or Delegate to Congress, officer, agent, or employee of the United States is or shall be admitted to any share or part of this contract or to any benefit to arise therefrom, and sections 3739, 3740, 3741, and 3742, Revised Statutes of the United States, so far as applicable, enter into and are a part of this agreement.

17. This contract is executed on behalf of the company in pursuance of a resolution of its board of directors dated 1909, certified copy of which is hereto attached.

In witness whereof the parties to this agreement have hereunto set their hands and the Company has caused its corporate seal to be affixed the day and year first above written.

TRUCKEE RIVER GENERAL ELECTRIC COMPANY,
By ——— ———
And by ——— ———

——— ———
Director of the United States Reclamation Service,
for and on behalf of the United States, party of the second part.

Approved this —— day of ———, 1909.

——— ———
Secretary of the Interior.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, DISTRICT 5,
San Francisco, Cal., July 31, 1909.

The FORESTER, *Washington, D. C.*

DEAR SIR: In reference to my telegram of July 30, about the Tahoe General Electric Co. contract:

I inclose a series of newspaper articles which have appeared about the proposed deal between the Reclamation Service and the Electric Co. The first one is from the Examiner of July 29. This and the ones which follow leave the impression in the mind of the public that the Government has been after the company for some time to sign just this sort of a contract and that the subordinate officials of the Reclamation Service have done all in their power to push it through. They also give the idea that the Secretary of the Interior has done his best to prevent it.

I do not know where the Examiner got the first tip, but when they did they called up Mr. Maltby at Concord about midnight and told him that Mr. Kent had given them the story, asking him to furnish a few further engineering details. As you can see from the article, it was built entirely upon the information that Mr. Maltby gave them supplemented by a few facts they got from the company. Mr. Kent said afterwards that he had seen nobody and made no statements about it.

By the time you get these the matter will probably have died down, but I would like to know whether you want a straight statement of facts given out or not.

Very truly, yours,

COERT DU BOIS,
Acting District Forester.

[From San Francisco Evening Bulletin, July 29, 1909.]

BALLINGER COMING TO PROBE LAKE TAHOE POWER DEAL—RECLAMATION SERVICE MAKES PACT WITH W. P. HAMMON WHICH MANY FEAR WILL RUIN MOUNTAIN RESORT.

Secretary of the Interior Ballinger is on his way here to investigate a secret deal through which the United States Reclamation Service officials have been led into authorizing a contract which will take from the Government water-power rights worth millions. The deal involves the control of the Lake Tahoe watershed and, according to William Kent, the Marin County capitalist, will absolutely ruin Lake Tahoe, decimate the forest about it, and work millions of dollars' worth of harm to the people at large.

It is because of the vast importance to the public which the secret deal has assumed that Secretary Ballinger is coming here to make a personal investigation.

A. W. Maltby, Government expert on water-power matters, has declared the contract bad for the Government, although it gives the Government what was asked in the matter of supervision of the forests in the affected district.

On the other hand, A. E. Boynton, who represents the Truckee River General Electric Co., the corporation which will benefit through the contract, declares that no trickery was used to gain the result which has stirred up official Washington. He also says that the only losers through the contract will be the interests headed by W. P. Hammon, whom he represents.

Newest and most startling of all developments is the information, just received, that Secretary of the Interior Ballinger is on his way here to investigate all phases of the Lake Tahoe deal and either rescind the action of his subordinates who passed favorably on the original contract, or so change its terms that it will protect the Government against all loss.

SITUATION IN BRIEF.

Briefly, the situation is this:

The Truckee River General Electric Co. gained control of the only outlet of Lake Tahoe, being the Truckee River.

The United States Reclamation Service, finding it impossible to complete the Truckee reclamation project without the waters of Lake Tahoe, cast about for relief.

All sorts of propositions and counterpropositions were made. The electric company was obdurate. Finally it was agreed that if the Government would turn over the control of the Lake Tahoe watershed to the company, the latter would in return abandon the outlet, allowing the Government sufficient water to insure success for the reclamation project. The Government was also forced into agreeing to pay one-half the cost of the construction of a new dam across the Truckee and to pay all operating costs of the dam while it was being used for irrigation purposes.

KENT PROTESTS.

Largely through the vigorous protest of William Kent, the Marin County capitalist, were the true facts about the contract brought out.

Mr. Kent has been in constant correspondence with high Government officials, pointing out the unfairness of the contract and in other ways opening their eyes to the menace of giving away control of the Tahoe watershed. All of this correspondence and all reports on the subject, no matter from what source, have been boiled down and placed before President Taft, who probably will be the final judge of whether the contract shall be operative.

So far as can be learned, the contract has been authorized by some of the lesser officials and would now be operative but for the timely interference of Mr. Kent.

Had it been put into full force, there would be established along the shores of Lake Tahoe huge water-power plants. These would use practically all the water which feeds the lake.

WOULD DRAIN LAKE.

According to those who profess to know, the giving control of the Lake Tahoe watershed into the hands of a private corporation will not only ruin the timber in the shed, but will in time drain the lake itself. This is because new courses for the water will be found.

Secretary Boynton, on behalf of the Hammon interests, this morning declared that when the plans of the company are carried out

Lake Tahoe will not be harmed in any way. He also says that, although there is a combination of all the Hammon interests now in process of formation, the capital will not be nearly what it has been reported, but will be nearer $5,000,000 than $50,000,000. Mr. Boynton says that the Hammon interests are suffering greatly by the terms of the new contract and that to give up control of the outlet of Lake Tahoe is a public benefaction, for it will insure the Truckee-Carson irrigation scheme and will injure the private interests of the corporation for the time being at least.

[From San Francisco Examiner, July 29, 1909.]

SECRET DEAL WITH UNITED STATES PUTS TAHOE IN SYNDICATE'S CLUTCH.

Fifty Million Dollar Power and Light Plants to be Installed and Residents Fear the Beautiful Lake Will be Drained.—Protests Are Hurried on to President Taft—Great Corporation, Headed by W. P. Hammon, Gains Perpetual Rights by Relinquishing Control of Truckee Outlet—Big Coup is Admitted by Secretary Boynton—Reclamation Service Makes Pact to Perfect Nevada Irrigation System, but Final Approval Is With Ballinger.

DETAILS OF GIGANTIC DEAL ENTERED INTO BETWEEN THE UNITED STATES GOVERNMENT AND THE TRUCKEE RIVER GENERAL ELECTRIC CO.

Truckee River General Electric Co. relinquishes control of Truckee River outlet to Lake Tahoe to the Government. Federal Government in exchange grants Truckee River General Electric Co. perpetual rights to any locations in Lake Tahoe and Truckee River watersheds. Government agrees to pay one-half cost of building new Truckee Dam and full cost of operating same for irrigation purposes. Granting of rights to the syndicate means the establishment of plants upon the shore of Lake Tahoe and a $50,000,000 power scheme. Granting of these rights raises storm of protest from property owners, who fear waters of the lake will be drained.

A secret Government deal, involving the absolute domination of the watershed of Lake Tahoe by a private syndicate and the control in perpetuity of water rights which may be capitalized at not less than $30,000,000 or $40,000,000, came to light yesterday in this city.

Negotiations for this deal have been going on in secret for a number of months between the Reclamation Bureau of the Department of the Interior and the syndicate headed by W. P. Hammon, who has come to the front in the last few years in the control of electric light and power properties in Nevada and California.

These negotiations came to a head on July 1, when a formal contract was drawn up between Hammon's Truckee River General Electric Co. and the Reclamation Service.

CONTRACT IS VIRTUALLY A TRADE.

The contract is virtually a trade, and the Hammon people were in a position to force remarkable concessions from the Government in return for the right of the Reclamation Service to control the flow of water from the Truckee River into the main canal of the Government's Truckee-Carson irrigation project.

The character of the trade by which the Hammon syndicate gained control of the watershed of Lake Tahoe may account for the secrecy with which the negotiations have been carried on.

A number of interests, however, have by some means found out what has been going on and are preparing to make vehement protest to President Taft against the consummation of an arrangement which they think will finally mar the Lake Tahoe region, one of California's most beautiful spots and one of the most beautiful scenic regions in the world.

FORWARDS PROTEST TO TAFT.

One protest, it is stated, has already been sent to President Taft. The sender is William Kent, the Marin County capitalist, who recently gave a part of his redwood forest holdings on the slopes of Mount Tamalpais for the purposes of a Government forest reservation.

There are many wealthy and prominent people who are building fine country homes on the shores of Lake Tahoe. These people include I. W. Hellman, the banker; the Tevis family; the Bissell family; and many others.

They have by some means ascertained in part what these secret negotiations portend, and it is said that they will shortly swell the volume of protests to be sent to President Taft.

THE FORESTS ARE PROTECTED.

A. W. Maltby, who is an expert of the Government Forestry Service, has been on the ground under instructions from the Government, to see whether the contract entered into interferes in any way with forest rights in the Lake Tahoe region.

Maltby, who arrived in this city yesterday, declares that while the forests rights are fully protected, it is his understanding that the Government gives the Hammon syndicate the right to use any location in the Lake Tahoe watershed that it may select to establish a power plant or plants.

This is a perpetual right the Government gives the Hammon syndicate, and it is given free of charge.

NEW DAM TO BE BUILT.

Maltby also says that in return for these sweeping concessions the Hammon people are to enjoy, the Government is to be given an interest in the Hammon Dam at the head of the Truckee River, so that it can control the flow of water from the river into the main canal of the Truckee-Carson irrigation project.

A new dam is to be built at the head of the river, and Maltby says the Government, according to the contract, assumes all liability for damages in making the contemplated improvement and agrees to pay one-half the cost of construction and the full cost of operation.

The Truckee River General Electric Co. owns all the land at the head of the river and an old dam there. It has controlled this property for a number of years. A few months ago Hammon came into possession of this company.

BOYNTON ADMITS THE DEAL.

Hammon is out of the city, but the secretary of the company, A. E. Boynton, who is the personal representative of the capitalist, admitted last night the existence of the contract that had been secretly entered into with the Government.

Boynton said that the negotiations had been closed by the signing of the contract on July 1, and admitted that himself and Vice President Gardner had signed it for the company. Boynton explained that the contract was then sent east for the signatures of the Government officials.

Boynton said he did not know who signed the contract for the Government, but that it was his understanding that the terms of the document were not to become operative until approved by Secretary of the Interior Ballinger.

PRIVILEGES ARE VALUABLE.

Boynton emphasizes the fact that the Hammon company absolutely controls the only outlet of Lake Tahoe, which is the head of the Truckee River. The contract, he said, makes a very plain provision whereby the Government obtains an interest in this control so as to regulate the flow of the water of the river to the Truckee-Carson irrigation canal.

Boynton refused to discuss in detail the concession which the Government has seen fit to give the company in return, although he did say that valuable privileges have been bestowed on the Hammon people.

"I was sent up to Lake Tahoe by the Government," said A. W. Maltby.

[From Oakland Tribune, July 29, 1909.]

TRUCKEE-CARSON PROJECT IS SETTLED.

WASHINGTON, July 29.—After negotiations which have continued unsuccessfully for several years between the Government and the Truckee Electric Co., for the use of the storage waters in Lake Tahoe for the Truckee-Carson irrigation project in Nevada, it is believed an amicable settlement shortly will be reached. A contract for the use of the waters has been drawn up and only requires the removal of certain technicalities before being signed by the Secretary of the Interior.

[From San Francisco Call, July 30, 1909.]

LAKE TAHOE IS NOT IN DANGER FROM GRANTS.

ACTIVITY OF HAMMON ON TRUCKEE RIVER EXPLAINED BY THE POWER CONCESSIONS—GOVERNMENT MAKES OVERTURES IN ORDER TO GAIN WATER FOR NEVADA IRRIGATION.

The activity of the representatives of W. P. Hammon on the Truckee River has occasioned widespread interest among the power companies, and reports have been circulated of impending deals calling for investments of $50,000,000 or more. It appears, however, that the Hammon interests, while of great extent, are not of the proportions indicated. The Truckee General Electric Co., one of Hammon's concerns, has recently entered into an agreement with the Government by which the corporation surrenders control of the outlet of Lake Tahoe at the Truckee River in exchange for various concessions.

These concessions, it is understood, include grants of power-house sites, water rights, and other privileges in the adjacent lands.

TRANSACTION IS SIMPLE.

"The transaction was a simple one," said A. E. Boynton, attorney for the Hammon interests. "The Government found that it did not have enough water for its big irrigation project in Nevada and opened negotiations with us in order to acquire the outlet from Lake Tahoe. In this manner the Government will be able to regulate the flow of water. There will be no interference in any way with the natural beauties of Tahoe, nor will the lake be drained, or anything of the sort. It will be left just as it is. Neither the scenic attractions nor the fishing advantages will be in the least affected."

While Hammon has recently taken the preliminary steps toward the development of the Loon Lake project, it may be some time before this is made part of the general plan for a consolidated power company.

NOT CONNECTED WITH HAMMON.

Boynton denied emphatically that Hammon was in any way connected with E. H. Harriman. He said, however, that when Harriman converted the mountain system from steam to electricity Hammon would be in a position to sell him power.

"The privileges granted us in exchange for the lake outlet," said Boynton, "are really of minor importance. The Government proposed the exchange and we hesitated before accepting it. There has been no secrecy, and there need be none. We do not come into possession of Lake Tahoe watersheds, as has been represented. All we get are a few privileges on which we do not place a very great value. It is not true that any power concessions have been granted us in perpetuity nor do our plans contemplate any construction work that need alarm the residents on the shores of Lake Tahoe."

The agreement between Hammon and the Federal authorities must eventually be submitted to Secretary Richard A. Ballinger, of the Interior Department, for his approval. As the request for the exchange came from the Government officials, the Hammon people believe that the terms of the agreement will be formally ratified.

BALLINGER NOT INFORMED.

PORTLAND, July 29.—R. A. Ballinger, Secretary of the Interior, is on the westbound Union Pacific train between Boise and Portland to-day. In answer to the telegraphic inquiry by the Associated Press if the Government had granted or intended to grant power concessions asked for in the Lake Tahoe watershed by W. P. Hammon and others, Secretary Ballinger replied that he "has no information as to the alleged privileges desired by W. P. Hammon and others." Ballinger also stated that a report in circulation in San Francisco that he is going to that city to investigate these power concessions is unfounded.

WILL USE TAHOE WATER FOR IRRIGATION PROJECT—LONG NEGOTIATIONS ARE ABOUT TO BE AMICABLY SETTLED.

WASHINGTON, July 29.—After negotiations which have continued unsuccessfully for several years between the Government and the Truckee Electric Co. for the use of the storage waters in Lake Tahoe for irrigating the Truckee-Carson irrigation project in Nevada, it is believed an amicable settlement shortly will be reached. A contract for the use of the waters has been drawn up and only requires the removal of certain technicalities before being signed by the Secretary of the Interior.

[From San Francisco Examiner, July 30, 1909.]

RESIDENTS UPON FAIR TAHOE FEAR VANDALS.

Ballinger Will Visit Scene of Deal—United States Pact with Electric Corporation Starts War, with Home Owners Aligned—Gives Monopoly Forever—Boynton Denies Scenery Will Be Marred—Director Newell Scored by Chief.

THOSE WHOSE HOMES TAHOE DEAL AFFECTS.

The following are among the property owners holding lands on the shores of Lake Tahoe whose homes may be affected if the deal between the Government and the Truckee General Electric Co. goes through:

James K. Moffatt, has country seat; Dr. Herbert C. Moffatt, owns country seat on shores of the lake; Mrs. C. B. Brigham, big property owner; C. Frederick Kohl, owner of palatial country home; William A. Bissell, possessor of bungalow on lake shore; William Tevis, owns magnificent country place and many acres; C. M. Jacques, property owner; John Babcock, owns country place; I. W. Hellman, possesses vast acreage and beautiful residence; M. L. Effinger, property owner; W. J. G. Lamber, of Los Angeles; the E. A. Baldwin estate, controls Tallac; the Bliss people, owners of Tahoe Tavern; the McKee family, big property owners; George H. Brougher; the Schmiedells, owners of country seat.

The publication in the Examiner yesterday of the secret deal between the United States Reclamation Service and W. P. Hammon's Truckee River General Electric Co., giving the latter a monopoly of water and power rights in the Lake Tahoe and Truckee River watersheds, caused a sensation among the many wealthy people who have homes along the lake shore.

It also caused deep interest among officials of other corporations owning power sites in that part of the State.

There are more than $3,000,000 worth of improvements along the shores of the lake, and the investors of this large amount of money are afraid that they are going to be greatly damaged.

FEAR MARRING OF SCENERY.

They fear a rise in the level of the lake, due to the proposed new dam which the contract calls for. That the natural beauties of that part of the Sierra Nevada Mountains will be marred and blemished by the vandal hand of people, solely actuated by the commercial spirit, is the keynote of their opposition.

The contract, according to those who have seen it, stipulates that the Government agrees to give the present holders of the outlet the same water pressure they are now getting, and by raising the level of the lake 6 feet to make it continuous throughout the 12 months.

This project, if carried through, would ruin many of the palatial residences along the lake shore.

BALLINGER TO VIEW LAKE.

As near as can be ascertained, this contract simply awaits the approval of Secretary of the Interior Ballinger before it becomes effective. Protests sent to President Taft, and others to be sent, may, however, have the effect of holding up this deal.

The Secretary of the Interior will reach Portland to-morrow, and it is said that he will be here in a few days and go to Lake Tahoe to look over the ground himself.

A dispatch from Washington last night sets forth that the deal is practically effected, and that after certain technicalities have been removed will be signed by Ballinger, unless after a personal inspection he sees fit to reverse the action taken by Director Newell of the Reclamation Service.

ARE REPORTED UNFRIENDLY.

Ballinger and Newell are reported not to be on very good terms, for the reason, it is alleged, that Ballinger thinks Newell's administration of the Reclamation Service has been full of mistakes.

It is said one of these mistakes relates to the Truckee-Carson Irrigation project. As the story goes, Ballinger thinks Newell should not have spent $4,000,000 on canals for the Truckee project before obtaining control of the outflow of Lake Tahoe into the Truckee River.

Now that the money has been spent and the irrigation project is in existence, the Secretary is said to think the control of the lake's outflow must be in the hands of the Government. It is for this reason, it is said, that he favors a deal to get this control.

Whether he will go as far as Newell and give the Hammon people all that they have asked and all that the contract is said to call for remains to be seen. The property owners hope when he is here to have a talk with him and urge him to fully protect their interests.

COPY OF CONTRACT HERE.

Preliminary to this personal conference with Ballinger, protests against the contract are being forwarded to President Taft. William Kent, of the property owners, and a public-spirited citizen of this State, has already protested to Taft. Among the other property owners along the lake who expect to either protest to the President or to confer with Ballinger are: James K. Moffitt, Dr. Harry Moffitt, Mrs. C. B. Brigham, C. Frederick Kohl, William A. Bissell, William Tevis, C. M. Jacques, John Babcock, I. W. Hellman, M. L. Effinger, W. J. G. Lambert, of Los Angeles, the E. A. Baldwin estate, which is planning a new hotel at Tallac, the Bliss people, who own the Lake Tahoe Tavern, the McKee family, George H. Brougher, the Schmiedells, and others.

It is known that there is one copy of this contract in San Francisco. It is in the possession of A. E. Boynton, the secretary for Hammon.

He will not make it public without permission of Hammon, who is in New York.

BOYNTON DEFENDS DEAL.

Boynton, however, insists that the contract is the result of a year and a half's insistence on the part of the Government that it be given the control of the outflow of Lake Tahoe into the Truckee River.

This, he says, has been done, and that the Government in turn has not given the General Electric Co. a monopoly of power sites around Lake Tahoe. He does not say what the company gets in return, but does insist that the terms of the contract do not mean that the natural beauty and scenery of the Lake Tahoe region is in any way to be marred at the hands of Hammon and his New York and English associates.

According to Boynton, the company has given much to the Government and got but very little in return, except a guaranty that its vested interests along the Truckee River, including three power plants, will be fully respected and protected.

SHUTS OUT COMPETITORS.

There is every indication, however, that the Hammon people, by this contract, have driven a shrewd bargain with the Government.

It unquestionably means, among other things, that nobody else but the Hammon syndicate will ever be able to get water from Lake Tahoe for power purposes, and especially that no man or association of men will ever get the consent of the Government to tunnel through the western slope of the Sierras into Lake Tahoe to create power plants in the sections of California west of the Sierras.

The contract will give the Hammon people an absolute monopoly of all the water of the Truckee River for power plants in Nevada. This will be the basis of their contemplated widespread electric-light and power-transmission plant throughout the State. In California for their proposed power plants they will utilize the waters of the Rubicon River in Eldorado County.

KENT FIGHTING CONTRACT.

A dispatch from Portland last night represented Ballinger as stating that he has not as yet seen the contract giving certain privileges to the Hammon people.

William Kent, one of the property owners on the shores of Lake Tahoe, is strongly urging President Taft to prevent the consummation of the deal. He said last night:

I have been correctly quoted as being opposed to the contract. I have sent a protest to President Taft. For obvious reasons I can not specify the grounds on which my protest is based. The protest does not originate, however, from the fact that I own property on the shore of Lake Tahoe. It is not a personal protest, but one based on broader grounds. I do not believe the contract is consonant with the general public interest.

A. E. Boynton said last evening:

The Reclamation Service, or the Government, has been very insistent for over a year, or probably a year and a half, to get the General Electric Co. to make this contract. The Government tried to make it with the Fleishhackers before Mr. Hammon and his associates bought them out.

The Fleishhackers and the Government did not come to any agreement. This caused the Government to file a suit to condemn, for the purposes of the Reclamation Service, the dam at the head of the Truckee River, where the lake flows into it, and all other necessary property at the head of the river owned by the General Electric Co.

This suit was filed in the United States circuit court in this city and is still pending. No doubt the suit will be dismissed, now that an amicable agreement has been reached.

GOVERNMENT MADE OVERTURES.

I mention these facts to show that all overtures leading up to this contract came from the Government for perfecting the Truckee-Carson irrigation project.

The contract, I should say, is a compromise between the contracting parties. I do not understand that there is any secrecy about the contract.

I have a copy of it in my minutes of the company meetings, but I do not feel privileged to make it public without the consent of Mr. Hammon. Mr. Hammon is now in New York and has no associates on this coast in this particular matter.

Whether the Government could have condemned and taken this particular property from the General Electric Co. does not need to be discussed now in view of the fact that an amicable arrangement between the two parties has been agreed upon.

This contract does not mean that the natural scenic beauties of Lake Tahoe are in any way to be destroyed or that the lake in any manner is to be damaged or that any of the property owners around the lake are to suffer damage.

It would not be feasible or practicable for the General Electric Co. to erect power plants on the shores or sides of Lake Tahoe, because there would not be in those positions the necessary fall of water. The only place for power plants is along the Truckee River.

The General Electric Co. has three power plants along the Truckee River at present, and they require a certain amount of water all the year around for the generation of electric light and power. These are vested rights which can not be disturbed, and the contract between the Government and the company respects these rights.

I can say that the contract will give the Reclamation Service the control of the water from Lake Tahoe into the Truckee River. The old log dam at the head of the river is to be supplanted by a new concrete dam.

It is my understanding that the Government will pay one-half the cost of building the concrete dam and pay the annual cost of operation. If in operating the dam any property owners on the lake are damaged and bring suit, the Government will have to take care of such litigation.

[From Oakland Tribune, July 30, 1909.]

TRUCKEE-CARSON PROJECT IS SETTLED.

Contract for Use of Waters in Tahoe Only Awaits Signature—Perpetual Rights for Power Plants—Terms of Agreement Cause Protest from Marin County Capitalist.

WASHINGTON, *July 29.*—After negotiations which have continued unsuccessfully for several years between the Government and the

Truckee Electric Co. for the use of the storage waters in Lake Tahoe for the Truckee-Carson irrigation project in Nevada, it is believed an amicable settlement shortly will be reached. A contract for the use of the waters has been drawn up and only requires the removal of certain technicalities before being signed by the Secretary of the Interior.

TERMS OF AGREEMENT.

SAN FRANCISCO, *July 29*.—As understood here, the agreement between the Government and the Truckee River General Electric Corporation provides that the Reclamation Service will gain control of water necessary to complete one of the Federal irrigation schemes, and an electric company, which is headed by W. P. Hammon, will be given in return perpetual rights for power plants in the vast Lake Tahoe and Truckee River watersheds.

William Kent, a Marin County capitalist, who recently donated a famous redwood grove to the State, has protested against the exchange proposed and has attempted to have the matter brought to the attention of President Taft. Kent, who claims to have investigated the subject, believes that Lake Tahoe, one of the famous inland resorts of western America, will be endangered by the advent of commercial promoters.

TO INSTALL PLANTS.

A. E. Boynton, secretary of the Truckee River General Electric Co., stated to-day that he had signed a contract, since forwarded to Washington for signature by the officials of the Reclamation Service, whereby the syndicate is given the right to install power plants in any portion of the Lake Tahoe watershed.

A. W. Maltby, an expert of the Federal Forestry Service, has made an inspection of the watershed and declares that the contract interferes in no manner with the forest reserves surrounding the lake.

According to Maltby, the Government in return for the concession made, is to be given the right to control the flow of the Truckee River into the main channel of the Truckee-Carson Government irrigation project. The electric company owns all the land at the head of the Truckee, which is the only outlet to the lake, and Secretary Boynton, discussing the negotiations to which he has been a party, said:

> The Government has expended $4,000,000 on the irrigation project, which will ultimately reclaim 130,000 acres of land, but the Government does not control the dam site, and consequently is not in position to regulate the flow of water necessary for purposes of irrigation.
>
> By the terms of this contract, the Reclamation Service will control the dam site, and Mr. Hammon and his associates are obtaining privileges they deem of value to them.

It is understood that the entire matter is still subject to the consideration of the Secretary of the Interior.

[From Chronicle, July 30, 1909.]

KENT SEES DANGER IN HAMMON'S PLANS.

Wires Taft that Lake Tahoe Contract Will Work a Great Injury—Ballinger Noncommittal—Secretary of the Interior Denies that He Came West to Investigate.

Following the announcement of the plans of the Hammon syndicate for the development of electric power on a large scale at Lake

Tahoe and on the Truckee, Carson, and Walker Rivers, which was first made public in the Chronicle on the 10th of this month, William Kent, nature lover and guardian of the big trees, claims to have discovered something that is against the public interest in the project and has wired President Taft a protest, which he is following by a letter addressed to the President.

The particular feature of the development which Kent criticises is the contract which has been entered into between the Interior Department and the Hammon people for a control of the outlet of the lake, which was considered to have satisfied both the requirements of the Government in connection with the Truckee-Carson irrigation project and the fears of the littoral owners at the lake that their lands might be flooded at the will of the power people, as well as the wishes of Hammon.

WHEN KENT OBJECTS.

But Kent has assured the President that in his opinion there is something bad in this contract, one clause of which gives the Hammon syndicate the right to divert the water of the lake in other ways, provided the Government shall sanction the diversion.

Just what the result of this clause will be is somewhat difficult to understand in view of the fact that the engineering plans of the syndicate do not appear to be matured. At one time, as has been previously published, it was the intention to construct a tunnel from the lake 9 miles in length and opening at Hell Hole on the Rubicon, where a power station was contemplated. Along with this plan was the idea of diverting the upper waters of the Rubicon watershed into the lake, which would have been used as an immense reservoir. More recently the engineers engaged in the work have doubted the practicability of this plan, and it is said that the present intention is to use Loon Lake in a somewhat similar fashion. Nevada had also protested at Washington against the proposed diversion of the Tahoe water to California.

Kent said last night:

I have wired President Taft advising him that the contract between the Hammon syndicate and the Government is against public interest, in my opinion, and I am about to mail him my reasons more in detail for holding this opinion. Further than this, courtesy to the President demands that I should say nothing.

WHAT KEESLING SAYS.

Francis V. Keesling, attorney for some of the interests involved in the Truckee development, said last night:

The idea that has been suggested that the Truckee development contemplated the draining of the lake should characterize the entire statement for any sensible reader, for the simple reason that the law would not permit such a thing.

Among the reasons for entering into the agreement with the Government was the desire to reassure the littoral owners at Lake Tahoe that their rights would be absolutely safeguarded, and that there would be no arbitrary raising and lowering of the level of the water. The other causes for the execution of the agreement are to be found in the more economical use of the water and the prevention of waste by judicious control, thereby adding to the capacity of the Government's Truckee-Carson irrigation project, which without the rights acquired from our companies might have been seriously handicapped.

The statement that nothing in the development of the Tahoe project will interfere in the least with the natural levels of the lake should set at rest all idle speculation as to the rights of littoral owners being invaded. The Government has no greater rights where private property rights intervene than has an individual.

CONFERENCE AT RENO.

Keesling left last night for Reno, where F. G. Baum is at present in conference with several representatives of the Eastern and English capitalists who have joined with Hammon in the syndicate which proposes to develop 200,000 horsepower on the Truckee, Carson, and Walker Rivers.

A. E. Boynton, Hammon's secretary, while he admits that the ultimate plans of the syndicate are greater than have yet been announced, asserts that Kent has nothing to fear in the way of an invasion of the natural beauties of the lake and that there is no intention of molesting "the timber, the water, the fish in the water, or any other of the natural beauties of Lake Tahoe." He said:

> We have no intention of diverting the water of Lake Tahoe to this side of the Sierra, and the power plants which will be constructed on the Truckee are only one part of the power development which will be undertaken on the Carson, Walker, and Rubicon Rivers as well.

Along with the announcement of Kent's protest came the rumor that Secretary Ballinger was coming west post haste to investigate Hammon, who is at present in Boston, and to inquire into the agreement which he had made for conserving the water of the Truckee-Carson project.

WHAT BALLINGER SAYS.

As a matter of fact Ballinger happens to be on a trip in the West, and arrived in Portland last night. When he was asked if he had any knowledge of power concessions granted to Hammon at Lake Tahoe he replied that he "had no knowledge of privileges desired by Hammon," and stated that the report in circulation in San Francisco that he was coming to this city to investigate the contract for the joint control of the Lake Tahoe outlet was without foundation.

Kent also added his authorization to the statement that Ballinger was not in the West to investigate Hammon, and said that his protest had gone direct to the President.

The history of the case is that for several years the Interior Department had sought to enter into a contract with the Truckee General Electric, recently purchased by the Hammon syndicate, which would enable it more judiciously to control the headwaters of the Truckee at the outlet of Lake Tahoe. Several suits had been started, and different plans proposed, but it is now thought that the matter has been definitely settled by the contract, which gives the Government the control of the water for irrigation, while it guarantees the power rights sought by Hammon.

Boynton states that no power plant will be constructed at the lake, but that the plans which are in the hands of the engineers contemplate extensive developments on the Truckee for the fuller utilization of the fall of the water.

A dispatch from Washington last night states that this contract with Hammon has been one of the causes of friction between Director Newell of the Reclamation Service and Secretary Ballinger, and that a former contract which had been drawn by Newell was considered by Ballinger to have been too broad in the rights granted to Hammon.

Ballinger is reported to have remarked with some heat that "while Newell might be an eminent engineer he wasn't much of a lawyer." But Newell's friends came to his defense with the assertion that he was only doing what had been expected of him by the previous administration.

Newell's contract was redrawn, and the impression in Washington seems to be that the new form has not yet been signed by Ballinger; but Hammon's representatives here were of the opinion that the contract had been closed previous to the original publication of the matter in the Chronicle on the 10th of this month.

AUGUST 2, 1909.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge your letter of July 30, transmitting a copy of the proposed contract between the Department of the Interior and the Truckee River General Electric Co. There is on file in the Department of the Interior a report from the Forester discussing this contract and urging that it be not executed until a thorough examination has been made on the ground. On June 15 I indorsed in a letter to the Secretary of the Interior the report of the Forester and protested formally against the execution of the contract.

I have the honor to be, sir,

Very respectfully, your obedient servant,

JAMES WILSON, *Secretary.*

[Memorandum concerning proposed cooperative contract between the Department of the Interior and the Truckee River General Electric Co.]

The company has—

1. Fifty-four acres of land at the outlet from Lake Tahoe into Truckee River, valued by the Secretary of the Interior at $56,000.
2. A small dam located on the above land, which controls the water flowing from Lake Tahoe into Truckee River.
3. A water right of 400 cubic feet per second used for power development along Truckee River.

The United States has—

1. All unappropriated and surplus waters of Lake Tahoe, appropriated by the Reclamation Service for the Truckee-Carson project under the reclamation act.
2. The public lands along the shores and in the watershed of Lake Tahoe and the Truckee River.
3. National forest lands, including reservoir sites involved in the proposed contract, and other lands absolutely essential to the development of the company's plans.
4. The right to control the development of power on these lands in the public interest.

Under the proposed contract the United States gets—

1. The right to use so much of the 54 acres of land owned by the company as may be necessary.

2. Relief from half the cost of a new dam, estimated by the Secretary of the Interior at $25,000.
3. Relief from liability for damage covered by terms of contract, estimated by the Secretary of the Interior at $10,000.
4. Water estimated by the Secretary of the Interior as sufficient to irrigate 70,000 to 80,000 acres, which water, already appropriated by the United States, could be made available with equal certainty by the condemnation of the 54 acres of land and the dam.

Under the proposed contract the company gets—

1. The right to a new power development, estimated by the Secretary of the Interior to develop 30,000 horsepower and reported to be several times larger, with the necessary rights of way for the distribution of the power.
2. The right to maintain its present power developments in operation and to select at any time during five years any or all reservoir sites and rights of way for flumes, ditches, tunnels, transmission lines, etc., on the public lands, within the watersheds of Lake Tahoe and Truckee River, necessary to satisfy vested rights to an amount not stated.
3. Hence a monopoly of water power developed from the very important watersheds of Lake Tahoe and the Truckee River.
4. Ownership of this monopoly, without compensation to the people beyond the value of $91,000, entirely without annual charge, and in perpetuity, in direct opposition to the established policy regarding water powers.
5. Perpetual protection, at Government expense, the water-yielding capacity of the national forest lands at the headwaters and sources from which this power is derived.

The uncontrolled monopoly thus proposed to be assured by the Government to the Truckee River General Electric Co. and its successor is—

1. In violation of the established policy concerning water power.
2. In violation of the legal right and duty of the Secretary of Agriculture to control the use of land within the boundaries of national forests and against his formal protest.
3. In violation of the ruling of the Attorney General that coöperative assistance for the construction of irrigation works is not legal.
4. In direct promotion of a well-known attempt to fasten an oppressive monopoly of water power upon the inhabitants of the region.
5. Apparently illegal, because it violates section 5 of the act of Congress, dated April 16, 1906 (34 Stat., 116), by granting to the company in perpetuity and free from the preference rights for municipal purposes, the power developed, in part at least, under a project undertaken under the reclamation act.
6. Apparently illegal, also, because no authority exists for giving more than a revocable permit to the company. Act of February 15, 1901 (31 Stat., 790).
7. Unnecessary, because the desirable public ends which it seeks to attain can be reached by another method (condemnation) without involving dangerous precedents or other injurious results.

It is reported that this cooperative contract is an essential part of a very important consolidation and development of water-power interests, whose field will extend from San Francisco to western Nevada. It is reported also that a corporation, the Lake Tahoe Water & Power

Co., has been formed to take over the Truckee General Electric Co. with its subsidiary companies and other water-power companies, and that the consolidation is to supply power to move the trains of the Central Pacific Railroad Co. across the Sierra Nevada Mountains. If these reports are true, sustained public attention will be directed to all the facts in the case, including the proposed contract.

Mr. W. P. Hammon, reported to be connected with the corporation organized to take over the rights under the proposed contract, was largely interested with H. H. Yard in the most extensive attempt yet made in the United States to secure possession of timber lands by illegal use of mining locations. He is largely interested in developed and undeveloped California water powers in the national forests.

Mr. W. F. Bourn, reported to be connected with the corporation formed to take over the rights under this contract, is similarly interested in securing water rights on public lands in California by methods which have aroused vigorous opposition and complaint in the localities in which he is operating.

United States Department of Agriculture,
Forest Service, District 5,
San Francisco, Cal., August 3, 1909.

The Forester,
Washington, D. C.

Dear Sir: An investigation has been made of the probable reservoir and power sites that will be applied for by the Truckee River General Electric Co. on the watersheds of Lake Tahoe and the Truckee River in accordance with the provisions of the pending contract between this company and the Department of the Interior.

The available reservoir sites on these watersheds are Webber Lake, Little Truckee No. 1, Henness Pass, Independence Lake, Twin Valley, Donner Lake, Squaw Valley, Dog Valley, and Little Truckee No. 2. All of these, with the exception of Little Truckee No. 2, which is situated on the Little Truckee River immediately north of Boca, were formerly recommended for construction by the Reclamation Service by L. H. Taylor while supervising engineer of the Truckee-Carson project. All, with the possible exception of Little Truckee No. 2, are feasible reservoir sites, would be comparatively inexpensive for construction, and would have an aggregate storage capacity of 90,000 to 100,000 acre-feet.

The Reclamation Service, under date of October 13, 1908, withdrew for reclamation uses under first form all the lands around these reservoir sites, together with all land within 1 mile of the Truckee River, from Lake Tahoe to Wadsworth. (Telegram, Means, July 29, 1909.) According to the records of this office the reclamation withdrawals cover the lands given in the inclosed memorandum. A large part of the lands covered by these withdrawals our records show to be not public lands, but railroad patented, State patented, homestead patented, cash entry, etc. Under each reservoir site is given in the memorandum the lands which the office records show to be public.

In consideration of the contract with the Truckee River General Electric Co., it is uncertain what disposition the Reclamation Service will make of these withdrawn lands. The terms of the contract, which allow the Truckee River General Electric Co. to make reservoir locations on any lands "belonging to or controlled by the Government" on the watersheds of Lake Tahoe or the Truckee River, would indicate that it is not the intention of the Reclamation Service to make use itself of the reservoir sites withdrawn. Whether, in the absence of intention to actually construct such reservoirs, it is the purpose of the Reclamation Service, on the ground that such lands are under the "control" of the Interior Department, to turn them over to the Truckee River General Electric Co., to be used in the furtherance of this company's plans or to restore them to their original status of national-forest lands, is, of course, unknown.

Were these lands under the primary control of the Forest Service, it would seem advisable that they should be withdrawn by the service as "power sites." It may not be possible, however, to do so in face of the withdrawal for reclamation uses, even though such uses appear to be annulled by the terms of the contract with the Truckee River General Electric Co. On the other hand, it might not be deemed good policy to make such withdrawals for power sites, even if the right exists. It has seemed best, however, to state the situation, that such action, if any, may be taken as seems advisable.

There is a power site on Emerald Bay, on the shores of Lake Tahoe, not covered by reclamation withdrawals, of small capacity and yet one that might seem of sufficient value to the Truckee River General Electric Co. to be developed in conjunction with other plants upon the watershed of the Truckee River. It is, therefore, recommended that the following public lands be withdrawn as a power site: SW ¼ NE. ¼, NE. ¼ NW. ¼, SW. ¼ NW. ¼, SE. ¼ NW. ¼, NE. ¼ SW. ¼, NW. ¼ SW. ¼, SW. ¼ SW ¼, all of sec. 28, T. 13 N., R. 17 E., M. D. M.

Very truly, yours,

COERT DU BOIS,
Acting District Forester.

AUGUST 3, 1909.

[Memorandum for Forester:]

RESERVOIR SITES WITHDRAWN BY UNITED STATES RECLAMATION SERVICE, AUGUST 13, 1908, FOR TRUCKEE-CARSON PROJECT, NEV.

Webber Lake Reservoir.—T. 19 N., R. 14 E., M. D. M. Sec. 20, E. ½ SE. ¼; sec. 21, S. ½; sec. 27, W. ½ NW. ¼; sec. 28, entire; sec. 29, E. ½; sec. 32, E. ½ NW. ¼, NE. ¼, SE. ¼; sec. 33, NW. ¼, W. ½; NE. ¼, SW. ¼.

Public lands included in withdrawal: Sec. 28, E. ½ SE. ¼; sec. 32, SW. ¼ SE. ¼.

Little Truckee Reservoir No. 1.—T. 19 N., R. 14 E., M. D. M. Sec. 23, SE. ¼; sec. 24, entire; sec. 25, entire; sec. 26, entire.

Public lands included: Sec. 24, NE. ¼, NW. ¼, SW. ¼.

T. 19 N., R. 15 E., M. D. M. Sec. 16, entire; sec, 17, entire; sec. 20, N. ½ NE. ¼, N. ½ NW. ¼; sec. 21, N. ½ NE. ¼, N. ½ NW. ¼.

Public lands included: Sec. 20, N. ½ NE. ¼.

Independence Lake Reservoir.—T. 19 N., R. 15 E., M. D. M. Sec. 33, SE. ¼; sec. 34, entire; sec. 35, entire.

Public lands included: Sec. 34, SW. ¼ NW. ¼.

T. 18 N., R. 15 E., M. D. M. Sec. 2, NW. ¼; sec. 3, entire; sec. 4, entire; sec. 5, SE. ¼; sec. 8, NE. ¼, N. ½ SE. ¼; sec. 9, W. ½ NE. ¼, NW. ¼, N. ½ SW. ¼, NW. ¼ SE. ¼.

Public lands included: Sec. 2, NE. ¼ NW. ¼, SW. ¼ NW. ¼, SE. ¼ NW. ¼; sec. 4, entire; sec. 5, SE. ¼; sec. 8, NE. ¼, N. ½ SE. ¼; sec. 9, W. ½ NE. ¼, NW. ¼, N. ½ SW. ¼, NW. ¼ SE. ¼.

Henness Pass Reservoir.—T. 19 N., R. 16 E., M. D. M.; sec. 20, NE. ¼ NW. ¼, SW. ¼ NW. ¼, SE. ¼ NW. ¼.

No public land.

Twin Valley Reservoir.—T. 18 N., R. 15 E., M. D. M.; sec. 13, S. ½ SW. ¼; sec. 14, S. ½ SE. ¼; sec. 23, NE. ¼; sec. 24, entire; sec. 25, N. ½ NE. ¼.

Public lands included: Sec. 24, SE. ¼ NE. ¼, NE. ¼ NW. ¼, SW. ¼ SE. ¼; T. 18 N., R. 16 E., M. D. M.: sec. 19, SW. ¼ NW. ¼, W. ½ SW. ¼; sec. 30, NW. ¼ NW. ¼.

No public lands included.

Donner Lake Reservoir.—T. 17 N., R. 15 E., M. D. M.; sec. 12, S. ½ SE. ¼; sec. 13, entire; sec. 14, entire; sec. 15, entire.

No public lands included.

T. 17 N., R. 16 E., M. D. M.; sec. 7, S. ½ SW. ¼; sec. 17, entire; sec. 18, entire.

No public lands included.

Squaw Valley Reservoir.—T. 16 N., R. 16 E., M. D. M.; sec. 28, NW. ¼ SW. ¼; sec. 29, NE. ¼, S. ½ SW. ¼, SE. ¼; sec. 32, NE. ¼, NW. ¼, N. ½ SW. ¼, N. ½ SE. ¼; sec. 33, NW. ¼.

Public lands included: Sec. 32, NW. ¼ NW. ¼, SW. ¼NW. ¼, SE. ¼ NW. ¼, N. ½ SW. ¼, N. ½ SE. ¼.

Dog Valley Reservoir.—T. 20 N., R. 17 E., M. D. M.; sec. 24, S. ½ NE. ¼, S. ½ NW. ¼, SW. ¼, SE. ¼; sec. 25, NE. ¼, NW. ¼, N. ½ SW. ¼.

Public lands included: Sec. 24, SW. ¼ NW. ¼.

T. 20 N., R. 18 E., M. D. M.; sec. 30, N. ½ NW. ¼, SW. ¼; sec. 31, NW. ¼.

All public land.

Little Truckee Reservoir No. 2.—T. 18 N., R. 17 E., M. D. M.; sec. 16, entire; sec. 21, entire; sec. 28, N. ½.

Public lands included: Sec. 28, W. ½ NW. ¼.

[Telegram.]

CLEVELAND, OHIO, *August 4, 1909.*

PRICE,
Forestry, Washington, D. C.

Please send with Stahlnecker copy our Tahoe statement and latest Cunningham correspondence.

PINCHOT.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, DISTRICT 5,
San Francisco, Cal., August 5, 1909.

The FORESTER, *Washington, D. C.*

DEAR SIR: I have made a field examination of the possible reservoir sites on the watershed of the Little Truckee River, of the present Lake Tahoe outlet, and of the Washoe Basin. These locations and their possible uses by the Truckee River General Electric Co., in pursuance of the terms of their contract with the Interior Department, have been thoroughly discussed with Mr. Maltby, as well as the probable effect of this contract if carried out in literal accordance with its provisions.

I heartily concur in the conclusions reached in the report ("D"—Policy—Power—Truckee General Electric—Reclamation Service agreement) presented by Mr. Maltby.

Very truly, yours,

O. C. MERRILL,
Engineering Expert.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, DISTRICT 5,
San Francisco, Cal., August 4, 1909.

TO THE FORESTER: I have examined the agreement and made such examination on the ground of the central features as time and facilities permitted. Review of an agreement, loosely drawn as this seems to be and which does not include the usual map and plans, leads to rather unsatisfactory results. The company's purposes can only be guessed at and the possibilities discussed. It is unlikely the company has itself reached a decision as to how it will develop the properties, it being given five years in which to select power and reservoir sites on the Lake Tahoe watershed and the Truckee River watershed (par. 7), maps and plans being required only as these selections are made; it is given five years additional in which to construct its works (par. 7), and its rights are perpetual and without charge (par. 7; par. 5, line 18).

Lake Tahoe-Truckee River outlet.—The company agrees in paragraphs 1 to 4, inclusive, to relinquish to the Government the control and operation of this outlet, dam, and gates (par. 4), but not the fee of the property, on condition that certain flows of water be maintained in the Truckee River at Floriston (par. 4, line 12), above the company's present works and plants, and on the further condition that the Government pay all expenses of operating (par. 9, line 10) the gates, one-half the cost of construction (par. 11), repairs, and renewals (par. 9, line 7) of a new dam and gates to replace the present old wooden structure, release the company from all responsibility for damages (par. 8) to persons and property, and retain 350 second-feet of the stored water in Lake Tahoe (par. 4, line 20) to meet the company's requirements for power purposes during the fall and winter months subsequent to the irrigation season.

Water available for irrigation purposes should be increased through the agreement covering the present outlet, possibly to the amount estimated by the Reclamation Service of 200,000 acre-feet.

The new dam will not impound more water than formerly, but all may be discharged more effectively through the larger openings to be provided and by dredging the approach to a greater depth.

It is assumed that the company's claim to the water and its title to the present dam and location is good; that it will have a good title to the location of the new structure, and that it could have successfully prevented the Government from dredging and improving the Lake Tahoe outlet, so as to fully utilize the surplus waters claimed by the Government. Under these circumstances the agreement up to this point seems reasonable and adequately compensates the company for the simple relinquishment of its right to operate the gates.

A knowledge of the location and careful reading of the agreement gives the impression that the agreement as originally considered was practically completed with the provisions of paragraph 4. It would seem that later additions were made that amount practically to a blanket permit covering the entire Lake Tahoe-Truckee River region without making the additions agree with the provisions of the original sections.

Second diversion.—The company is granted additional consideration in paragraph 5 and subsequent paragraphs, being permitted to divert the waters of Lake Tahoe at a point to be selected by it later and to be known as the "second diversion." (Par. 5, line 15.)

"The company and its assigns * * * shall have the exclusive right to use the waters delivered and diverted * * * for such power purposes as it or they may desire at any point or points" before the water is returned to the Truckee River. (Par. 6.)

The Government agrees to deliver all the water of the lake thereafter to the second diversion, including the surplus and unappropriated water heretofore appropriated by the Government. (Par. 5, line 53; par. 10, line 11.)

The Government also agrees to discontinue the use of the natural or Truckee River outlet after the second diversion outlet is completed, using the natural outlet for spillway purposes only. (Par. 5, line 53.)

The company is apparently given the right to control and operate the second diversion outlet and the Government the right to "regulate." (Par. 5, line 19.) The company therefore, when the second diversion is completed, will be given the control and operation of the only outlet to Lake Tahoe in use.

The company may build reservoirs below the second diversion "to store waters therefrom" (par. 5, line 22) for power purposes. Compared with the supply through the natural outlet now used these storage requirements, together with the increased evaporation due to increased surface exposure, will result in a reduced supply of water for irrigation purposes.

The only limit to which the company is subjected is through the provision that the flow at Clark Station shall not be less than before the second diversion and additional reservoirs were permitted. (Par. 5, line 37.) This, if based on the average flow as of date of signing contract and prior thereto, as I interpret it, would deprive the Reclamation Service of the increased water supply (200,000 acre-feet) secured through the construction of the new dam at the Truckee River outlet, and leave the Government in control and operation of the unused outlet only.

The company is limited to the withdrawal of 475 acre-feet. (Par. 5, line 29.) It is not clear where this limitation is to be applied.

The Government is released from liability for damages due to the discharge in the Truckee River of 2,500 second-feet. (Par. 8, line 8.) It would be difficult to determine in case of damage that it was caused by exactly this discharge. The Government does not seem to be actually released from any liability under this provision.

The Government must operate and control the reservoir outlets storing the waters from second diversion, when completed, the same as provided for in paragraph 4 for the control and operation of the Truckee River outlet. (Par. 5, line 21.) Stored in reservoirs to the northeast of Lake Tahoe, probably the only feasible locations, the waters therefrom would be discharged 40 miles below Floriston, the point at which it is provided in section 4 the flow of 400 to 500 second-feet must be maintained, and hence nullifies that portion of section 4. It will be possible, however, to comply with the condition that a reserve of 350 second-feet be retained in the reservoir for the company's use during the fall and winter months, as is provided for in section 4.

Survey of the region will be necessary to determine total power possibilities under the agreement. To the north and east of Lake Tahoe, using Lake Washoe for reservoir purposes, two power stations may be located with total possible output of 60,000 horsepower. Under the agreement also and in lieu of the above a power station with 500 feet head and about 15,000 horsepower capacity might be located near Truckee on the Truckee River, diverting the water at or near the present Lake Tahoe-Truckee River outlet.

Forest reserve lands.—In paragraph 7 the company is permitted to occupy Government lands in the Truckee River watershed for storage purposes and for the location of power plants. A number of reservoir locations on the tributaries of the Truckee River have heretofore been surveyed by the Reclamation Service and recommended for construction. These locations were in part in the forest reserve, but were withdrawn by the Secretary of the Interior for reclamation purposes, and are no longer under the control of the Agricultural Department.

The permission given in the agreement to the company to occupy these locations would indicate it is not the intention of the Reclamation Service itself to construct the reservoirs. It would seem somewhat irregular for the Reclamation Service to withdraw forest lands for reclamation purposes, and, having thus obtained control, to turn the lands over to a power company for power purposes, for this use leaves only a small proportion of the stored water available for irrigation during the irrigation season. A color of authority may be given for this by the use of the words "for the use and benefit of the Truckee-Carson project." (Par. 5, line 22.) Otherwise, it is unlikely the company will actually require the use of forest reserve lands to carry out the agreement. Dependent somewhat on the point at which the power is to be used it may find the use of forest lands for transmission lines necessary, and application will probably be made later for the right to so use some forest lands, at which time the usual conditions may be applied.

Section 12 provides in effect the agreement may be canceled in case of a failure on the part of the Government to fulfill its terms in controlling the flow of water and as to delivery of water to the company. And it is further provided if at any time there be a dispute between the parties as to the application of this provision, such dispute shall be decided by the Secretary of the Interior, whose determination shall be final.

In paragraph 5, line 17, provision is made that the second diversion outlet may not be higher than the natural outlet to the lake, but its depth is not limited. Retaining control and operation of the outlet the company, therefore, it would seem, has the enforcing of its rights under the agreement in some measure in its own hands and will not be compelled to rely entirely on the Government's good faith and promise to deliver all the waters of the lake at the second diversion outlet, nor submit entirely to the decisions rendered by the Secretary of the Interior in case of disputes which, in view of the lack of certainty given to the provisions of the agreement, the possible change of ownership and officials 10 years hence may be numerous. Resort to the courts under the circumstances would seem inevitable. They would hardly be ousted.

Objections to the agreement are suggested: (1) Granting of the rights in perpetuity; (2) and without charge for the use of Government property; (3) contract is vague from the Government's side and should be given greater certainty; (4) reasonably complete maps and plans not having been made a part of the agreement; (5) no low level fixed for second diversion outlet; (6) the company is allowed excessive compensation for the mere relinquishment of the right to operate gates; (7) the net result of the making of the agreement is the assurance that the company's operations shall not result in a less flow at Clark Station for the use of the Truckee-Carson reclamation project than heretofore.

A. W. MALTBY.

Personal.

AUGUST 5, 1909.

Mr. COERT DU BOIS, *San Francisco, Cal.*

DEAR DU BOIS: Inclosed is a copy of a memorandum regarding the proposed contract between the Interior Department and the Truckee River General Electric Co., which Mr. Pinchot submitted to the President, and as the result of which the President took the action described in my last letter to you. It is of the utmost importance that the statements contained in this memorandum should be supported as fully as possible by the results of a study of conditions on the ground. If the study made by Mr. Maltby has already gone sufficiently deep to accomplish this, then no further study is necessary. If it has not done so, and my impression is that Mr. Maltby's study had been somewhat general and hasty, then have him, if possible, or if it is not possible, have Merrill take the matter up thoroughly. If this matter comes up again when Secretary Ballinger returns we want to be fully prepared at all points. Since Secretary Ballinger's return is possibly some time in September, there is not much time to lose. I would like any useful information which we do not already possess regarding the essential points brought out in the memorandum generally. The most important of all is approximately how much power, in addition to the power it now controls, the Truckee River General Electric Co. would control as the result of the execution of this contract. If possible, I would like to have separately an approximation of the power which the company would develop under the contract from the stored waters of Lake Tahoe and the power which they would develop from the watersheds of Lake Tahoe and the Truckee River. It is also important to ascertain what reservoir sites on or off national forest land the company would control as the result of the execution of this contract and what rights of way across national forest land and other public lands would be necessary in order to utilize these powers. Nobody but yourself, Fritz, and the man who makes the examination on the ground should see the copy of Mr. Pinchot's memorandum to the President, and it must be kept absolutely confidential, of course, for reasons outlined in my last letter.

Your letter of July 31, with the clippings, has just come. I think the most effective way to meet them will be through the publicity gained under the plan involving Mr. Kent, about which I have written you, and we should give nothing out from the service in this connection. It might be a good thing to make this plain to Maltby.

Very sincerely, yours,

OVERTON W. PRICE,
Associate Forester.

I also inclose a copy of the amended agreement as was prepared by the Interior Department, for which Mr. Maltby asked.

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, DISTRICT 5,
San Francisco, Cal., August 6, 1909.

The FORESTER,
Washington, D. C.

DEAR SIR: I transmit herewith a report by Mr. Maltby on the proposed contract by the Reclamation Service and the Truckee River General Electric Co., together with a note by Expert O. C. Merrill, concurring in Mr. Maltby's recommendations.

Very truly, yours,

COERT DU BOIS,
Acting District Forester.

[Telegram.]

SAN FRANCISCO, CAL., *August 11, 1909.*

PRICE,
Forest Service, Washington, D. C.:

Your letter August 5 to Du Bois received. Does Maltby's report, transmitted August 6, contain all information desired or should further field examination be made to determine approximate power development? Maltby probably not available at present and Merrill on other important work, but examination can be made if essential.

OLMSTED.

AUGUST 12, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR MR. OLMSTED: Mr. Du Bois's letter of August 3, with inclosure, is received. The forester is glad to get the information your letter contains, but it is believed that the service should not at this time ask the Secretary of the Interior to make the withdrawals of the tracts already covered by the reclamation withdrawals and also the lands in section 28, T. 13 N., R. 17 E., M. D. M., known as the Emerald Bay Reservoir site. The question will be further considered, however, upon Mr. Pinchot's return from the West.

Very sincerely, yours,

(Signed) W. J. MANGAR,
Acting Law Officer.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., August 13, 1909.

OLMSTED,
Forest Service, San Francisco, Cal.

Absolutely essential Merrill commence examination earliest possible moment. He should give particular attention to ascertaining approximate power possibilities, territory involved, opportunity for monopoly, and other essential conditions needed as basis for final consideration proposed contract. Letter follows.

OVERTON W. PRICE.

[Telegram.]

WASHINGTON, D. C., *August 13, 1909.*

GIFFORD PINCHOT,
National Irrigation Congress, Spokane, Wash.:

(If not there ascertain new address and forward.)

Just had satisfactory conference Senator Newlands, to whom proposed contract has been referred, about which you prepared memorandum. Designation committee of which you will be member probable to investigate actual conditions and report fully with recommendations. Letter Denver follows.

PRICE.

AUGUST, 13, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR FRITZ: I have just learned from Senator Newlands, with whom I had a two-hours' conference this morning, that the President has referred the proposed contract with the Truckee River General Electric Co. to him for his recommendation. Senator Newlands will probably recommend to the President at once the immediate appointment of a committee to study conditions on the ground and make their recommendations to him. This committee will probably consist of Mr. Pinchot, Newell, Leighton, the chief hydrographer of the Geological Survey, and Marshall, chief of the Corps of Engineers, Whitney, chief of the Bureau of Soils, and an eminent engineer of national standing, whom the President will select. This gives us three men, Mr. Pinchot, Leighton, and Whitney, on our side from the beginning. Newall and Marshall, Chief of Engineers, will be on the other side, but it is probable that the eminent engineer will see the thing straight and help to swell our majority.

As I have just wired you, I think it is absolutely essential that Merrill should commence an examination and ascertain, as far as possible in advance of the work of the committee, what the essential facts are regarding conditions on the ground. Maltby's reports have been valuable, but they lack the definiteness and also the adequacy which can come only from a thorough study of physical conditions on the ground itself.

Very sincerely, yours,

——— ———,
Associate Forester.

Please keep the proposed appointment of a committee by the President absolutely confidential. No one but you must know of it until it is done and made public.

[Telegram.]

SAN FRANCISCO, CAL., *August 15, 1909.*

PRICE,
Forest Service, Washington, D. C.:

Merrill begins examination Tahoe Truckee to-morrow. Action proposed lease land for ranger site on lake delayed account Kent being on hunting trip out of communication. He returns to-morrow.

OLMSTED.

AUGUST 16, 1909.

Mr. GIFFORD PINCHOT,
Care Forest Supervisor, Deadwood, S. Dak.

DEAR MR. PINCHOT: I had two conferences to-day with Senator Newlands, at the second of which Mr. Bien was present.

The Senator will recommend to the President immediately the designation of yourself, Newell, Leighton, and Marshall, Chief of Engineers, to act as a committee in a thorough investigation of all conditions involved in the proposed contract with the Truckee River General Electric Co. Senator Newlands's letter to the President will also suggest that the Reclamation Service employ an engineer of national reputation to share in the investigation conducted by this committee. Whitney will be left off, and as a matter of fact, he should be.

Bien, of course, did his best to induce the Senator to recommend immediate action upon the contract, but happily there is no danger of that. The only thing I regret about the business is, that it may interfere with your holiday, but I don't believe it will do so seriously, because 10 days on the ground, at most, ought to be enough.

Senator Newlands showed me the draft for his proposed letter to the President and let me make some suggestions regarding it, some of which he took. We would write the letter somewhat differently. But one of its good points is, that it makes absolutely plain that the central question involved is not the question whether the Reclamation Service gets what it wants, but whether the proposed contract is in accordance with the principles of conservation. This is brought out without taking sides, but it is brought out clearly. Naturally, Bien and I differed at nearly every point in the second conference with Senator Newlands. But we did so with entire friendliness, and there was not and will not be any temper. I also made it plain to the Senator, in a talk we had after Bien went away, that in this matter the service had never questioned the motive of the Reclamation Service, but only its judgment.

I inclose a copy of a letter I am sending to-day to Secretary Garfield. All well here.

Sincerely, yours, OVERTON W. PRICE.

AUGUST 16, 1909.

Hon. JAMES R. GARFIELD,
Garfield Building, Cleveland, Ohio.

DEAR MR. SECRETARY: I had a note from Mr. Pinchot several days ago asking me to get the facts regarding Mr. Bien's statement to Mr. Pinchot that last winter you were about to approve a contract with the Truckee River General Electric Co. similar to the one now proposed and to send these facts to you.

I have discussed this matter thoroughly with Bien. His statement, in effect, is that a proposed contract with the Truckee River General Electric Co. was submitted to you by Mr. Newell in December, 1908; that you considered it informally, and that Bien thinks Mr. Newell thought that you thought it was all right. I asked him if the contract was the same contract as the one now proposed, to which he replied that he was not sure, but that he did not think it was. His further statement is that in April, 1908, you signed a short letter, at Mr. Newell's request, to the representative of the Truckee River General Electric Co., stating that provided an agreement could be reached which would safeguard the public interest you would be glad to approve it. I asked him if this letter referred to any specific form of contract, either drawn or contemplated, and he said no. I asked him further whether, in his judgment, it bound the department to execute any contract at all with the Truckee River General Electric Co., and he said no. And I asked him still further whether, in his judgment, the writing of this letter by you could in any way be taken as a commitment of you to the execution of the contract now under consideration, and again he said no.

To sum up, Mr. Bien's statement to Mr. Pinchot that you were about to approve a contract similar to the one now proposed was, in my judgment, like other statements made by the Reclamation Service regarding the proposed contract, not untruthful in intent, but utterly misleading in effect. Mr. Bien, like Mr. Newell, has been and is still under heavy stress and has made partisan statements about the proposed contract which we would not have made were not the stress so severe. All this implies no criticism on my part of Bien personally, because I like him, and I believe implicitly that he means to do right.

I inclose a copy of a confidential letter to Mr. Pinchot regarding later developments in the Truckee River General Electric matter. A further conference with Senator Newlands this afternoon makes certain his immediate recommendation to the President of a committee composed of the gentlemen enumerated in my letter to Mr. Pinchot, with the exception of Dr. Whitney.

With best wishes, faithfully yours,

OVERTON W. PRICE.

[Telegram.]

SAN FRANCISCO, CAL., *August 19, 1909.*

FORESTER, *Washington, D. C.:*

San Francisco papers report that on Kent's protest the President has ordered delay on action Truckee General Electric contract pending further investigation. Is this true, and if so, is proposed contract available for public scrutiny?

OLMSTED.

[Indorsement at top of following letter.]

DEAR PRICE: This is admirable, and so is your letter to Garfield. I don't believe I shall miss my two weeks fishing anyhow. G. P.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., August 20, 1909.

DISTRICT FORESTER,
San Francisco, Cal.:

Should we be questioned regarding rumor that President will appoint committee to investigate, we must absolutely decline to discuss it until officially informed that such a committee will or will not be appointed, when I shall wire you. I see no reason for withholding essential points proposed contract, since it is in no sense confidential document. This should be done only to give information asked.

PRICE.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., August 20, 1909.

DISTRICT FORESTER,
San Francisco, Cal.:

My and your official statement must be that we are definitely and officially informed that action upon proposed Truckee River general electric contract is withheld, but that we decline absolutely to comment in any way upon newspaper reports that this is at the President's direction.

O. J. PRICE.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., August 20, 1909.

DISTRICT FORESTER,
San Francisco, Cal.:

I wrote you fully 13th regarding Truckee River general electric. If letter has not come, please wire.

O. J. PRICE.

[Telegram.]

SAN FRANCISCO, CAL., *August 20, 1909.*

PRICE,
Forest Service, Washington, D. C.:

Have your letter 13th, but want official confirmation of newspaper reports. Also instructions as to whether the essential points in proposed contract may be given to public.

OLMSTED.

AUGUST 24, 1909.

Mr. OVERTON W. PRICE,
Forest Service, Washington, D. C.

DEAR PRICE: All well so far. Our friends the enemy failed to capture the Trans-Mississippi Commercial Congress, although they did get the resolutions committee, but the resolution indorsing Eddy's Public Domain League was turned down on the floor, thanks to Goudy. Also one indorsing the F. S. was passed.

Mr. Hardtner, of Louisiana, is on the train and has just told me of a paper of F. C. Zachary, of New Orleans, which appeared about June 1 on "The power of the State to control methods of cutting." If you can lay your hand on it, I should greatly like to see a copy. It may be in conservation.

If you have any chance, put off the examination of the Truckee-Tahoe matter until about October 1. In that case I shall be able to get my vacation.

Kelleter is doing beautifully on the Black Hills. Things are quieting down tremendously and it is becoming evident that the men who were opposing us there were principally promoters of fake mining companies. All well. I wish you were not in Washington.

Sincerely, yours,

GIFFORD PINCHOT, *Forester.*

[Telegram.]

SAN FRANCISCO, CAL., *August 24, 1909.*

PRICE,
Forest Service, Washington, D. C.:

Company at work at new dam at Tahoe. Kent fears they are planning to work estoppel on account lacher of Government and riparian owners. Kent would enjoin, except that he does not wish interfere with Truckee-Carson project. He will fight unless Government stops them. Suit started by Kent may be hard to stop, as it is likely to be taken up by others having no sympathy with Reclamation plans. Wire advice.

OLMSTED.

[Indorsement.]

Until a conclusion is reached in reference to the contract now under consideration by the Government, Forest Service should not take or suggest any legal action.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., August 26, 1909.

OLMSTED,
San Francisco, Cal.:

Construction dam will not prejudice Government's case if proposed contract not executed. Not necessary from our standpoint for Kent to proceed, but he should do as he thinks best to protect his own interests. Our only and urgent duty this case is to gather all physical and other facts affecting proposed contract.

OVERTON W. PRICE.

AUGUST 26, 1909.

When action is taken on this contract see letter of August 24, 1909.

Mono uses California-Nevada Electric Power Co.'s reservoir and conduit. February 28, 1907.

A. C. SHAW.

[Telegram.]

WASHINGTON, D. C., *August 31, 1909.*

GIFFORD PINCHOT,
Care Forest Service, San Francisco, Cal.:

Bien and I agree that appointment proposed committee Tahoe unlikely until after decision reached regarding other matters. Nothing in sight here to interfere or which should interfere Avalon. All well.

PRICE.

POSSIBLE POWER OUTPUT OF TRUCKEE RIVER WATERSHED ABOVE CLARK STATION, NEV.

AUGUST 31, 1909.

WEBBER LAKE POWER PLANT.

Location: Takes water from Webber Lake. Plant located on shores of Little Truckee Reservoir No. 1. Canal, 1½ miles.

Head available, ±200.

Storage capacity, 20,000 acre-feet.

Assumed evaporation losses, 1,600 acre-feet.

Available uniform run-off, 42 second-feet.

Power, at 80 per cent efficiency, $42\times200\times\frac{1}{11}=765$ horsepower.

INDEPENDENCE LAKE POWER PLANT.

Location: Takes water from Independence Lake. Power house located on canal from Little Truckee Reservoir No. 1 to Twin Valley. Length of canal, 4½ miles.

Head available, ±530.

Storage capacity, 15,500 acre-feet.

Assumed evaporation losses, 1,800 acre-feet.

Available uniform run-off, 27 second-feet.

Power, at 80 per cent efficiency, $27\times530\times\frac{1}{11}=1{,}300$ horsepower.

TWIN VALLEY POWER PLANT.

Location: Takes water from Little Truckee Reservoir, delivering same at power house on shore of Twin Valley Reservoir. Canal, 15 miles.

Head available, ±200 feet.

Storage capacity: Little Truckee Reservoir No. 1, 60,000 acre-feet; Webber Lake Reservoir, 20,000 acre-feet.

Evaporation losses, assumed, 5,000 acre-feet.

Net storage capacity, 75,000 acre-feet.

Available uniform run-off: Little Truckee No. 1, 137 second-feet; Lake Independence, 27 second feet; total, 164 second-feet.

Power, at 80 per cent efficiency, $164\times200\times\frac{1}{11}=3{,}000$ horsepower.

PROSSER CREEK POWER PLANT.

Location: Takes water from Twin and Euer Valleys, including the water from the Twin Valley power house. Length of canal, etc., 7 miles.

Head available, ±500.

Storage capacity: Twin Valley, 27,000 acre-feet; Euer Valley, 5,000 acre-feet.

Evaporation losses, assumed, 2,000 acre-feet.

Net storage, 30,000 acre-feet.

Available uniform run-off: Twin and Euer Valleys, 62 second-feet; from Twin Valley power house, 164 second-feet; total, 226 second-feet.

Power, at 80 per cent efficiency, $226\times500\times\frac{1}{11}=10{,}250$ horsepower.

TRUCKEE POWER PLANT.

Location: Takes water from Donner, Cold, and Trout Creeks; power house just below highway bridge across Truckee River at Truckee.

Canal length, ±4 miles.

Head available, ±140 feet.

Storage capacity, net, 45,000 acre-feet.

Available uniform run-off, 89 second-feet.

Power, at 80 per cent efficiency, $89\times140\times\frac{1}{11}=1{,}130$ horsepower.

With 30,000 acre-feet storage.

Available run-off, 68 second-feet.

Power, at 80 per cent efficiency, $68\times140\times\frac{1}{11}=870$ horsepower.

BOCA POWER PLANT.

Lower Prosser Creek development, taking water from Lower Prosser Creek, below outlet of Alder Creek, conducting same to power house at Boca.

Canal length, ±4 miles.

Head available, ±325 feet.

Storage capacity, none.

Available from regular flow of stream, 10 second-feet; available from Prosser Creek power house, 226 second-feet; total, 236 second-feet.

Power, at 80 per cent efficiency, $236 \times 325 \times \frac{1}{11} = 7{,}000$ horsepower.

Truckee River, Truckee to Boca, canal, ±9 miles.

Head available, 225 feet.

Water available from Truckee power plant, 89 second-feet; from Truckee River, 30 second-feet; total, 119 second-feet.

Power at 80 per cent efficiency, $119 \times 225 \times \frac{1}{11} = 2{,}400$ horsepower.

Total power, 9,400 horsepower.

FLORISTON POWER PLANT.

(Using Truckee River from Boca to Floriston.)

Head available, 235 feet.

Water available from Prosser Creek, 236 second-feet; from Truckee River, 119 second-feet; total, 355 second-feet. From Little Truckee, 47 second-feet; grand total, 402 second-feet.

Power at 80 per cent efficiency, $402 \times 235 \times \frac{1}{11} = 8{,}600$ horsepower.

Summary of power developments above Floriston.

Location.	Head.	Water.	Horsepower.
	Feet.	*Sec. feet.*	
Webber Lake	±200	42	765
Independence Lake	±530	27	1,300
Twin Valley	±200	164	3,000
Prosser Creek	±500	226	10,250
Truckee	±140	89	1,130
Boca	±325	236	7,000
	±225	119	2,400
Floriston	±235	402	8,600
Total			34,445

POSSIBLE POWER DEVELOPMENTS FROM LAKE TAHOE.

Lake Washoe power plant.

Takes water by tunnels from Lake Tahoe to a point on shores of Lake Washoe near Franktown.

Length of tunnel, 4 miles; canal and pipe, 1½ miles.

Head available, ±1,150 feet.

Water available 394 second-feet.

Power at 80 per cent efficiency, $394 \times 1{,}150 \times \frac{1}{11} = 41{,}200$ horsepower.

Little Valley development.

Head available, ±1,400 feet.

Water available, 15 second-feet.

Power at 80 per cent efficiency, $15 \times 1{,}400 \times \frac{1}{11} = 1{,}900$ horsepower.

Total at Lake Washoe plant, 44,000 horsepower.

Steamboat Valley power plant.

Head available, ±500 feet.

Water available: Tahoe, 394 second-feet; Little Valley, 15 second-feet; total, 409 second-feet. Evaporation losses in Washoe, 30,000 acre-feet, equals 41 second-feet. Total available, 368 second-feet.

Power at 80 per cent efficiency, $368 \times 500 \times \frac{1}{11} = 16{,}750$ horsepower.

Clarks Station power plant.

Truckee River, Vista to Clarks Station.

Head available, ±200 feet.

Water available: From Floriston plant, 402 second-feet; from Steamboat Valley plant, 368 second-feet; total 770 second-feet. Irrigation uses, Reno Valley, 50 second-feet; Steamboat Valley, 20 second-feet. Available for power, 700 second-feet.

Power at 80 per cent efficiency, $700\times200\times\frac{1}{11}=12{,}700$ horsepower.

Summary of development from Lake Tahoe and Lower Truckee River.

	Horsepower.
Lake Washoe plant	44,000
Steamboat Valley plant	16,750
Clarks Station plant	12,700
Total	73,450
From Upper Truckee	34,445
Grand total	107,895

Possible storage reservoirs and available capacities, Truckee River watershed.

	Acre-feet.
Webber Lake	18,400
Little Truckee No. 1	56,600
Henness Pass	19,000
Lake Independence	14,700
Twin Valley	25,500
Euers Valley	[1] 4,500
Donner Lake	43,000
Squaw Valley	[1] 4,000
Dog Valley	6,000
Lake Tahoe	292,000
Lake Washoe	100,000
Little Valley	[1] 2,000
Storage exclusive of Lake Tahoe	192,000

Present power development on Truckee River.

Name.	Water.[2]	Head.[2]	Horsepower, 80 per cent efficiency.
	Sec. feet.	*Feet.*	
Floriston Pulp & Paper Co., at Floriston	400	56	2,040
Truckee River General Electric Co.:			
At Forad	400	85	3,090
At Fleish	300	126	3,440
Washoe Power & Development Co., at Mogul	300	88	2,400
Reno Power, Light & Water Co., at Reno	250	41	930
Total			11,900

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[*] Not available for use as merely restorage of Lake Tahoe waters but, on contrary, entailing loss of 30,000 acre-feet by evaporation.

[1] Estimated.

[2] From indenture dated Oct. 15, 1908.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, DISTRICT 5,
San Francisco, Cal., September 4, 1909.

The FORESTER, *Washington, D. C.*

DEAR SIR: I am inclosing you herewith a memorandum prepared by Mr. Merrill, of this office, showing approximately the possible power output of the Truckee River watershed, above Clark Station, Nev.

It is hoped early next week to be able to get information concerning the early history, organization, and transferred rights of the power plants now operating on the Truckee River. This information will be embraced in a formal report, which will soon be submitted, together with maps showing the location of the present power plants and the possible location for other power plants on the watershed of the Truckee River.

Very truly, yours,

G. M. HOMANS,
Acting District Forester.

SEPTEMBER 7, 1909.

Mr. O. C. MERRILL,
San Francisco, Cal.

MY DEAR MR. MERRILL: I am greatly in your debt for the parallel column copy of the Garfield-Ballinger contracts. I am sending copies of these to Mr. Garfield and Mr. Price. Personally, I have not yet had time to look them over, but shall take the papers with me to San Clemente and go over them then.

I am greatly in your debt for your prompt attention to this matter.

Very sincerely, yours,

——— ———,
Forester.

Signed (by instructions) in the absence of Mr. Pinchot.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE, ANGELES NATIONAL FOREST,
Los Angeles, Cal., September 7, 1909.

Mr. OVERTON W. PRICE,
Associate Forester, Washington, D. C.

DEAR PRICE: The inclosed parallel column comparison of the Garfield-Ballinger Truckee general electric contracts was made by Mr. O. C. Merrill, of the San Francisco office, showing whether or not it was true that Mr. Garfield, as claimed by the reclamation people, had approved a contract substantially like the one to which we object.

I have not had time to go over it yet, but shall before I get back from San Clemente, and there is little to do, anyhow, as to the facts of the matter. I am more and more clear that we have got that situation just where we want it.

Yours, as always,

GIFFORD PINCHOT, *Forester.*

Signed (by instructions) in the absence of Mr. Pinchot.
(Incls.:)

GARFIELD CONTRACT.	BALLINGER CONTRACT.
This indenture, made and entered into this 15th day of October, 1908, by and between Murray F. Vandall and Sonia F. Vandall, his wife, of the city and county of San Francisco, State of California, parties of the first part, and the United States of America, party of the second part. Witnesseth:	This agreement, made this thirteenth day of May, 1909, by and between the Truckee River General Electric Company, a corporation organized and existing in the State of California, its successors and assigns, party of the first part, hereinafter styled the "Company," and the United States, acting in this behalf by ——— ———, Director of the United States Reclamation Service, and subject to the approval of the Secretary of the Interior, party of the second part. Witnesseth:
That the said parties of the first part, in consideration of the sum of one (1) dollar to them in hand paid by the said party of the second part, the receipt of which is hereby acknowledged, and in consideration, further, of the conditions, covenants, and agreements of the said party of the second part hereinafter expressed and contained, do by these presents grant, bargain, and sell, convey and confirm unto the said party of the second part, its successors and assigns:	
All that certain piece or parcel of land, comprising about fifty-four (54) acres, situate in the county of Placer, State of California, being portion of section seven (7), in township fifteen (15) north, of range seventeen (17) east, Mount Diablo base and meridian, according to the United States Government survey, and being particularly bounded and described as follows, to wit:	Whereas, the company claims title to a tract approximately fifty-four acres, in the State of California, at the outlet of Lake Tahoe into Truckee River, together with the dam now constructed upon said premises near the head of Truckee River and the tenements, hereditaments, appurtenances and easements thereunto belonging, and by means of said dam now regulates the flow of waters so as to be available for use in the operation of several plants and factories on Truckee River hereinafter mentioned; and
Beginning at the northwest corner of the northwest quarter (¼) of the northwest quarter (¼) of section seven (7) in township fifteen (15) north, range seventeen (17) east, Mount Diablo base and meridian, according to the United States Government survey; thence south and along the	

west boundary of said northeast quarter of the northwest quarter of section seven, four hundred and fifty (450) feet; thence east four hundred (400) feet; thence south eight hundred and seventy (870) feet to the south boundary of said northeast quarter of northwest quarter of section seven; thence east along said south boundary two hundred and four (204) feet and to a point twenty (20) feet easterly from the easterly bank of the Truckee River; thence north fifty-two (52) degrees east, four hundred and sixty-three (463) feet, and to a point twenty (20) feet easterly from said easterly bank; thence south fifty-one degrees east four hundred and sixty-three (463) feet to the southeast corner of said northeast quarter of northwest quarter of section seven; thence south forty degrees four minutes east one thousand and eighty-one (1,081) feet, and to the westerly shore of Lake Tahoe; thence northerly along the westerly shore of Lake Tahoe to the corner of fractional sections six (6) and seven (7) in said township and range; thence west along the north boundary of said section seven, two thousand and eight (2,008) feet to the place of beginning.

Together with the dam now constructed upon said premises near the head of Truckee River, and all other tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof;

And also all other privileges, rights, and easements granted to or released in favor of the party of the first part by the Donner Lumber and Boom Company by deed dated October 23, 1902, and recorded in Book 78, at page 565, records of Placer County, California.

Whereas, the United States desires to utilize the waters stored in Lake Tahoe, in connection with the Truckee-Carson project in Nevada, constructed under the provisions of the act of Congress approved June 17, 1902 (32 Stat., 388), known as the reclamation act, and claims under appropriations made by it or on its behalf the unappropriated and surplus waters of Lake Tahoe and the Truckee River for irrigation and other uses in connection with said Truckee-Carson project and in this connection has also reserved the public lands along the shores of Lake Tahoe and in the immediate vicinity; and

To have and to hold all and singular the said premises, together with the appurtenances, unto the said party of the second part, and to its successors and assigns forever.

Subject, nevertheless to the following conditions, covenants, and agreements, all of which, by the acceptance of this conveyance, are assumed and agreed to be performed by the said party of the second part, its successors and assigns, namely:

It is understood by the parties hereto that the said lands and the said dam thereon were heretofore acquired, and until the execution of this conveyance have been held by the parties of the first part for the purpose of controlling and regulating the flow of water from Lake Tahoe down the Truckee River, where such water is used in the operation of five certain power plants or factories located upon the banks of said river, and extending from Floriston to a point near the town of Reno.

The said power plants or factories are of the description and character set forth in the following schedule:

Whereas the parties hereto now desire to provide for the utilization of all the waters of Lake Tahoe and of the Truckee River for irrigation and power purposes in such manner as to protect all vested rights to the use thereof for such purposes, and also to avoid waste of any such waters, as far as may be practicable, and generally to cooperate to the fullest extent for the beneficial utilization of the waters of Lake Tahoe; and

Whereas it is claimed by the company that the said lands, aggregating approximately fifty-four acres, and the dam thereon and rights appurtenant thereto at the outlet of Lake Tahoe into Truckee River were acquired, and are now held and have for a long time been held and controlled by the company for the purpose of controlling and regulating the flow of water from Lake Tahoe down the Truckee River, where such water is used in the operation of five certain power plants or factories located upon the banks of said river and extending from Floriston, in California, to a point at or near Reno, in Nevada.

The said power plants or factories are of the description and character set forth in the following schedule:

Name.	Location.	Diversion capacity (cubic feet per second).	Head (feet).
Floriston Pulp & Paper Co.	Floriston..	400	56
Truckee River General Electric Co.	Farad.....	400	85
Do............	Fleish.....	300	126
Washoe Power & Development Co.	Mogul.....	300	88
Reno Power, Light & Water Co.	Reno......	250	41

Name.	Location.	Diversion capacity (cubic feet per second).
Floriston Pulp & Paper Co.	Floriston....	400
Truckee River General Electric Co.	Farad.......	400
Do.................	Fleish.......	300
Washoe Power & Development Co.	Mogul.......	300
Reno Power, Light & Water Co.	Reno........	300

It being understood and agreed by the parties hereto that the amounts of water above specified are sufficient for all of said plants and factories, the same waters being used successively by each of them as such waters pass down the said river.

And this conveyance is executed upon and subject to the condition, covenant, and agreement that after the execution thereof, the flow of waters from Lake Tahoe down the Truckee

Therefore, the said parties hereof do agree:

1. It is agreed and understood that the amounts of water above specified are sufficient for all of said plants and factories, the same waters being used successively by each of them as such waters pass down the said river.

2. It is further understood and agreed that in order that the flow of said waters shall continue to be available for use in the operation of said plants, it is necessary that the gates

River shall be so controlled and regulated that the said waters shall continue to be available for use in the operation of each of the said plants and factories. And to that end there shall be maintained a flow of water in the said river at Floriston aforesaid of not less than 500 cubic feet per second from the first day of March, to the 30th day of September, inclusive, in each year, and at not less than 400 cubic feet per second from the first day of October to the last day of February, inclusive, in each year.

That such flow shall be maintained each year so long as the said water is required for the use of operation of the said five plants or factories, or any of them, by the present owners or holders thereof, their successors or assigns; and also to that end that no part of the said waters flowing in the said river between Floriston aforesaid and the head gates of the canal of the Reno Power, Light & Water Company, near Reno, shall be diverted from the said river by the said party of the second part, its successors or assigns.

of the dam at the lake outlet should be so manipulated that the flow of the Truckee River at Floriston, in the State of California, shall not be less than 500 cubic feet per second from the first day of March to the thirtieth day of September, inclusive, in each year, and not less than 400 cubic feet per second from the first day of October to the last day of February, inclusive, in each year,

and so that the lake elevation on the first day of October shall be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December.

3. In order that there shall be secured to the United States for the irrigation and other uses of the Truckee-Carson project all the water supply available by storage in Lake Tahoe, subject only to the conditions of flow and other conditions herein in this agreement fixed by the parties, the company covenants and agrees forthwith to reconstruct its said dam at Lake Tahoe and to build new outlet works in connection therewith, also gatekeeper's buildings, and perform the necessary dredging in accordance with plans to be approved by the Director of the Reclamation Service, and to push such construction to completion at the earliest date practicable, and to complete the same or such parts thereof as the Director of the Reclamation Service may require on or before November 1, 1909. Prior to November 1, 1909, such changes in the bridges, grade, and track of the Lake Tahoe Railway and Transportation Company as may be necessary for the discharge of twenty-five hundred cubic feet of water per second down the Truckee River without damage to the railroad shall be provided and the expense thereof shall be borne by the com-

pany; and until such changes are made, the company shall be responsible for all damage to lands or property on the margin of Lake Tahoe or along the Truckee River, and the company agrees that it will secure the full consent of the Lake Tahoe Railway and Transportation Company for the doing of such work. The company shall not be required to do any work of construction or reconstruction of the dam and outlet works which will affect vested rights in respect to the waters of Lake Tahoe and Truckee River as the same now exists, or which will subject it to claims for damage or injury in respect thereof.

4. The company agrees that, subject to the conditions of flow and the other terms and conditions of this agreement, the United States, commencing on the first day of November, 1909, shall have the actual and exclusive control and operation of said dam and outlet works, and the proper officers and agents of the United States shall at all times have unrestricted access to the premises and the right to use the same and the buildings and works thereon for the purposes of such control and operation. The United States covenants and agrees that after assuming control hereunder it will at all times properly provide for such control and operation under the terms of this agreement and will pay all the cost and expense of the same. In the operation of said works for the control of the outflow of Lake Tahoe the United States covenants and agrees to so manipulate the gates of the dam at the lake outlet that the flow of the Truckee River at Floriston, in the State of California, shall not be less than 500 cubic feet per second from the first day of March to the thirtieth day of September, inclusive of each year, and not less than 400 cubic feet per second from the first day of October to the last day of February, inclusive, in each year, and so that the lake elevation on the first day of October will be such that it shall be practicable to draw 350 cubic feet per second at any time in the months of October, November, and December. Subject to the aforesaid conditions of flow and lake level and subject to the rights of the company and other owners to maintain and operate at all times their respective plants and factories as aforesaid, and subject to the vested rights in Lake Tahoe and in the Truckee River, the United States in the operation of said outlet works

shall have and may exercise the exclusive right to regulate the flow of water through said works in such manner as may be deemed best by the United States to secure for its use in the Truckee-Carson project, for irrigation and other purposes, all the water supply available by storage in Lake Tahoe. The company agrees that after July 1, 1909, and prior to turning over the exclusive control of the dam and outlet works of Lake Tahoe to the United States, the company will operate the gates for the discharge of water into Truckee River according to such schedule, not inconsistent with the terms of this contract, as may be furnished by or under authority of the Director of the Reclamation Service.

5. Whenever the company shall relieve the United States from its agreement to operate the outlet works, so as to deliver water in the manner and in the amount as hereinbefore specified, from Lake Tahoe to the power plants on the Truckee River, and the company shall, to the satisfaction of the Secretary of the Interior, assume the liability for and the responsibility of protecting and satisfying vested rights of all kinds on the Truckee River, above Clarks Station on the Southern Pacific Railroad, said station being situated above the head of the canal constructed by the United States, and shall have made adequate provision to protect and satisfy all riparian, vested, and other rights to the satisfaction of the Secretary of the Interior; then the United States agrees that said company shall, subject to the provisos hereof, be entitled to divert water for power purposes at a point, hereinafter styled the second diversion, to be selected by the company on the margin of Lake Tahoe, and if on public land to be subject to approval by the Secretary of the Interior, not higher than the natural outlet of said lake, and without charge other than the stipulations of this agreement: *Provided*, That the regulation of the discharge through the outlet from Lake Tahoe at point of second diversion and the control and operation of any storage reservoirs built by the company to store waters therefrom for the use and benefit of the Truckee-Carson project shall be by the United States acting directly through its agents, the control of the United States of outlet works of such storage reservoirs to be in like manner as provided in paragraph 4 for control of the outlet works from Lake Tahoe

into Truckee River, the United States agreeing that the control of outlets from such storage reservoirs shall be such as to avoid, so far as possible, all waste of water: *Provided further*, That the company shall not draw water in excess of 475 acre-feet in any one civil day, when such draft is prohibited by the Director of the Reclamation Service; *And provided further*, That in case of such second diversion a sufficient quantity of water shall, by storage or other means to be provided by the company, be delivered to the Truckee River at or above the place of diversion for said Truckee-Carson project, near Clarks Station, in such manner that the second diversion shall not have the effect of diminishing the quantity of water flowing in said Truckee River, near Clarks Station, and which would be available for the use of the said Truckee-Carson project, in case no such second diversion for power purposes from Lake Tahoe were made or storage additional to Lake Tahoe were provided. In the event of such diversion, all storage works built by the company for the use and benefit of said Truckee-Carson project shall be subject to approval, both as to design and construction, by the Director of the Reclamation Service. In order that the company shall enjoy the full benefit of any such second diversion, the United States agrees, when such second diversion is made, that, subject to performance and satisfaction by the company of the conditions of this paragraph, the United States will so control the outlet works of Lake Tahoe into the Truckee River that such second diversion can be utilized and so that there will not be a greater discharge of the water of the lake into the Truckee River than is necessary to prevent damage from high water in Lake Tahoe or to satisfy rights on the river not otherwise provided for.

6. The company and its assigns, in case of such diversion, shall have the exclusive right to use the waters delivered and diverted, in pursuance of paragraph 5, for such power purposes as it or they may desire at any point or points before such diverted waters are taken into the Truckee-Carson canal by the United States at the headworks near Clarks Station, but in such manner that, subject to the terms hereof respecting the flow above specified, there shall be no unnecessary waste of water available for the Truckee-Carson project.

7. The United States agrees that the company in accordance with and subject to the laws of the United States, shall have the right to build dams and overflow such lands belonging to or controlled by the United States in the watersheds of Lake Tahoe and the Truckee River as may be necessary for the purpose of creating water storage to satisfy vested rights on the Truckee River, and the company shall file a designation of such places and lands with the Secretary of the Interior within five years from the date of this agreement, and shall build and complete all said works within five years of the date of the acceptance of each such designation, otherwise this stipulation, unless renewed in writing, shall by its own terms expire. The United States further agrees, in accordance with and subject to the laws of the United States that the company shall have the right to construct and properly maintain such power plant or plants, with appurtenances and connections, as the company or its assigns from time to time may elect on land owned or controlled by the United States and as may be necessary to utilize the waters of Lake Tahoe and the Truckee River and tributaries below the outlet of Lake Tahoe in connection with the purposes of this agreement: *Provided, however,* That all such plants shall be designated by a document in writing to be filed with the Secretary of the Interior within five years from the date hereof, and shall be completed within five years from the date of the acceptance of each such designation, otherwise this stipulation, unless renewed in writing, shall, by its own terms, expire, and shall also, in accordance with and subject to the laws of the United States, have the right of ingress or egress on such Government land and the right thereon to carry pipes, tracks and roadways, to place poles, and to run wires underground or overhead as may be necessary in connection with the proper and satisfactory operation and maintenance of such plants as are built to utilize said water in case of such diversion: *Provided, however,* That all maps of location on public lands within national forests shall in each instance be subject to the approval of the Secretary of Agriculture, to be given in writing, and no such right shall be exercised until such written approval is given by said Secretary.

8. The United States convenants and agrees that after it assumes operation of the dam and outlet works here-

It is further covenanted and agreed that in case such flow of the Truckee River, as hereinbefore described, shall not be so maintained, and thereby there shall be a scarcity of water or power for the use of the said plants or factories, or any of them, the said party of the second part, its successors and assigns, shall assume and guarantee the furnishing of power for the use and operation of each of the said power plants or factories, so that they shall receive the equivalent of a flow of the Truckee River to the extent above mentioned; if electric motors or other new apparatus or machinery be required for the use of power so furnished, the same shall be supplied with such power by the said party of the second part:

Provided nevertheless, That such guarantee and assumption shall not apply in case the failure to maintain the flow aforesaid shall have been

under and after the completion of the Lake Tahoe Dam, outlet works and railroad reconstruction as hereinbefore specified, it will protect and save harmless and indemnify the company against all claims for damages to persons or property, including the dam and other property of the Company, due to the operation of the dam and outlet works; but the United States shall not be held liable for damage to any property or interests below the outlet works resulting from a discharge of 2500 cubic feet of water per second from Lake Tahoe into Truckee River. The company agrees to hold the United States harmless against all claims for damage due to the operation of the gates at the outlet, prior to the completion of the said Lake Tahoe Dam, outlet works, and railroad reconstruction.

9. The company shall provide for all needful repairs and renewals of all its works which are under the control of the United States, and shall promptly provide for such repairs or renewals as may be deemed necessary by the Director of the Reclamation Service and in case of failure to do so after due notice, such work may be done by the United States at the expense of the company: *Provided*, That the cost of all repairs and renewals of any works or structures at the outlet from Lake Tahoe into Truckee River shall be borne equally by the company and by the United States: *Provided further*, That the United States shall pay all expenses of operation of all works of the company which are operated by the United States.

10. The United States shall not in any manner be liable for failure to maintain the flow of water specified in the several paragraphs of this

caused by extraordinary drought, or other act of God, or the public enemy, and shall not have been caused or contributed to by the drawing of water from Lake Tahoe by or under the direction or authority of the party of the second part, its successors or assigns: *And provided further*, That until the construction of a new dam or other works by the said party of the second part, the flow of water down the said river shall be subject to and dependent upon the capacity of the dam now existing.

It is further covenanted and agreed that the premises herein granted shall not revert to the grantor, his heirs or assigns, by reason of any temporary or partial breach or failure of performance of any of the conditions, covenants, or agreements herein contained, but shall so revert only, at the option of the grantor, his heirs or assigns, in the event that performance of such conditions, covenants, or agreements shall be abandoned or repudiated by the party of the second part.

agreement when such failure shall have been caused by extraordinary drought or other act of God or the public enemy or by unlawful interference; but it is agreed and understood that the United States shall have the right, subject to the specifications of flow herein made, to draw water from Lake Tahoe at any time and in such quantity as in the judgment of the Director of the Reclamation Service may be necessary to prevent damage to lands on the margin of Lake Tahoe, and in such case so much of said water shall be delivered to the company as may be requested by it. It is also understood and agreed that, until completion of the new dam and other works by the company the flow of water down the Truckee River shall be subject to and dependent upon the capacity of the works now existing.

11. In further consideration of the stipulations and agreements of this contract the United States will pay to the company, upon the completion of the dam, outlet works, gatekeeper's buildings, and required dredging at the outlet of Lake Tahoe, an amount equal to one-half the reasonable and necessary cost thereof as determined by the director, and upon the completion of said works at the Tahoe outlet the United States will execute, without other rental charge than the stipulation hereof, and upon conditions satisfactory to the Director of the Reclamation Service, a ten-year lease for the tract of land purchased by the United States from the Mercantile Trust Company, by deed dated August 9, 1904, and recorded in book 86, of deeds, at page 22, records of Placer County, California.

12. It is understood and agreed that the agreements on the part of the United States herein contained as to regulating and controlling the flow of water, and as to delivery of water in case of diversion, are the chief considerations moving the company to execute this agreement, without which and confidence in the performance of which by the United States, this agreement would not be made. The control of the dam and works aforesaid is given to the United States for the purpose of fulfilling the said provisions of this agreement, and such control shall continue only so long as it shall be exercised in the fulfillment of such purposes; if at any time there be a dispute between the parties as to the application of this provision, or the construction thereof, or as to the rights of either party under the same,

It is further covenanted and agreed that all the covenants and agreements herein contained shall be binding upon and inure to the benefit of the parties hereto, their several and respective heirs, executors, administrators, successors, and assigns, and shall run with the land. It is also understood and agreed that all of the conditions, covenants, and agreements herein contained have been made and entered into in the interest of, and for the benefit of, the several owners of the said power plants and factories, their several and respective heirs, executors, administrators, successors, and assigns.

such dispute shall be summarily decided by the Secretary of the Interior then in office, whose determination shall be final and conclusive upon both parties.

No person, firm, or corporation other than the United States, and no assign of the United States, whether by statute or otherwise, shall have any right to regulate or control the outlet works of the company under this agreement. This agreement shall inure to the benefit of, and bind the successors and assigns of, the company as well as the company itself.

13. This agreement shall not operate to bind the United States until it shall have been approved by the Secretary of the Interior, whose approval or disapproval will be signified within thirty days from receipt of copy hereof duly executed by the company.

14. It is understood and agreed that the United States does not undertake to become responsible for any but its own acts, nor to convey any right to the company not now possessed by the United States, nor which the Secretary of the Interior has not in law the right to convey; and that nothing in this contract shall be construed as impairing or affecting or requiring the United States to impair or affect the rights of any person, corporation, or interest not a party to this contract: *Provided, however*, That nothing herein contained shall prevent the United States from acquiring on its own behalf by adverse user or otherwise, the right to the use of any of the waters mentioned or referred to herein for irrigation and other purposes in connection with the Truckee-Carson project.

15. It is also understood and agreed that if the law of the United States should be changed in any respect so that the Director of the Reclamation Service shall not exercise the powers now exercised by him, or if said office shall be abolished, then all the powers and privileges to be exercised by the Director of the Reclamation Service shall be exercised by the Secretary of the Interior or by such officer as may be designated by him.

16. No Member of or Delegate to Congress, officer, agent, or employee of the United States is or shall be ad-

This conveyance is made in execution of an agreement of sale heretofore made between the parties of the first part and the party of the second part, executed in its behalf by ——— ——— of the United States Reclamation Service and approved by the Secretary of the Interior.

In witness whereof the said parties have executed these presents the day and year first above written.

mitted to any share or part of this contract or to any benefit to arise therefrom, and sections 3739, 3740, 3741, and 3742, Revised Statutes of the United States, so far as applicable, enter into and are a part of this agreement.

17. This contract is executed on behalf of the company in pursuance of a resolution of its board of directors dated 1909, certified copy of which is hereto attached.

In witness whereof the parties to this agreement have hereunto set their hands, and the company has caused its corporate seal to be affixed the day and year first above written.

TRUCKEE RIVER GENERAL ELECTRIC COMPANY,
By ——— ———.
And by ——— ———.

Director of the United States Reclamation Service, for and on behalf of the United States, Party of the Second Part.

Approved this —— day of ———, 1909.

——— ———,
Secretary of the Interior.

SEPTEMBER 14, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR MR. OLMSTED: Your letter of September 4 is received. Mr. Merrill's report when taken in connection with the report of Mr. Maltby, inclosed with your letter of August 6, gives a clear insight into the proposed contract. Mr. Wells will return at the end of this week and I know will be much interested in both reports. I have shown them to Mr. Price and he is much pleased with them.

Very sincerely, yours,

A. C. SHAW,
Acting Law Officer.

[Telegram.]

SAN FRANCISCO, CAL.,
October 2, 1909.

FORESTER,
Washington, D. C.

Is it possible to ascertain definitely whether Smith or Ballinger will desire representative from here in Tahoe matter? Complying Wells telegram, 30 days' leave of absence from last Monday was secured in Maltby court proceedings. Further postponement impossible. Could not cover both Tahoe matter and Washington conference within time at his disposal.

HATTON.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., October 3, 1909.

OLMSTED,
San Francisco, Cal.

Smith wired October 1 from Goldfield, suggesting Dyar as forestry representative field examination Tahoe with Ballinger and Smith. Forester wired Smith, October 2, that Maltby would represent service and could be reached by wire to you. Smith is at St. Francis Hotel, San Francisco. Tahoe examination more important than Washington conference, even if latter indefinitely postponed. Please use utmost endeavor to reach Smith and have Maltby on ground if representative of service is invited.

PINCHOT.

[Telegram.]

SAN FRANCISCO, CAL., *October 5, 1909.*

FORESTER, *Washington, D. C.:*

Secretary Ballinger wired Director Smith yesterday. Will be pleased to have Maltby join us at Tahoe. Maltby and Merrill leave Thursday; arrive Tahoe 8th. Maltby and Merrill can arrive Washington Monday, 18th, if desired. Necessary Maltby leave there returning evening of 20th. Answer.

HATTON.

MODIFIED CONTRACT.

1. Changes "holds" to "claims" site.
2. Does not acknowledge that company has used site and works to control waters of Lake Tahoe.
3. Words in () added (unimportant).
4. Words in ——— added; unimportant to F. S. A duty to operate perpetually continued.
5. Change of form only. Agreement formerly guaranteed delivery. Change entitles company to divert without charge.
6. Changed to give company control of new outlet works. United States continues to guarantee control of old works so that no increased flow shall go down Truckee River, thereby giving company power in flood waters stored. (Same in par. 6.)
7. Unchanged. Company gets power generated by flood waters.
8. Changed. F. S. could still only make such regulations as will protect national forests; could not prevent monopoly. Company gets by change right to overflow anywhere in watershed of Lake Tahoe or Truckee River and continues to have right to use national-forest land for works and transmission lines. Changed to require company to locate works in five years and complete in five years additional. Change possibly avoids granting rights for works and transmission

lines in perpetuity since there is no law under which such right could be given. This could be made clearer.

9. Unchanged; binds United States to pay for repairs, renewals of old works, and operation of same perpetually, except that it shall pay only one-half of cost of completion of dam.

1. Violates decision of May 26.
2. No authority of law for grant in perpetuity.
3. No charge made.
4. No value placed upon the power or basis for it.
5. Can go on bond to satisfy vested rights and take this for own use.
6. Contract unassignable.
7. Binds the United States to maintain perpetually and prevents transfer to water user.

[Telegram.]

HORNBROOK, CAL., *October 5, 1909.*

PINCHOT,
Forest Service, Washington, D. C.:

Ballinger has wired me he would be pleased to have Maltby join Tahoe investigation. Have notified Maltby, whom I met yesterday. Dyar won your case, Goldfield, most ably.

SMITH.

[Telegram.]

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, D. C., October 5, 1909.

OLMSTED, *San Francisco, Cal.:*

Postpone indefinitely Maltby's conference here. Forester will be absent dates named.

WELLS.

OCTOBER 5, 1909.

Hon. F. G. NEWLANDS,
Reno, Nev.

MY DEAR SENATOR: Upon the first opportunity after my return to Washington on September 29 I have taken up the matters referred to in our conversation regarding Lake Tahoe contract. I hope that your suggestion of a board of engineers or experts representing the different interests will bear early fruit. In this connection I wish to emphasize some of the points discussed with you and others regarding the contract, so that you may have clearly in mind the conditions which must be met by any board if it is to be of assistance in advancing the interest of the United States.

One of the first questions which is frequently asked is why the canal system has been developed before acquiring possession of Lake Tahoe. The answer will be plain in recalling the early history. You may remember that in the summer of 1902, immediately following the passage of the reclamation act, Director Walcott took up personally the question of the acquisition of the waters of Lake Tahoe, and at that time and subsequently he and all of us had every reasonable ground for belief that this matter could be brought to a successful issue, but that it would be unwise to delay canal construction awaiting the termination of negotiations.

The situation on the land to be irrigated was such that had we delayed canal construction to complete arrangements at Tahoe the project could probably not have been built, owing to the increasing complications. In other words, it was vital for success to follow the course pursued. In this the Secretary of the Interior and Director Walcott were guided undoubtedly by correct business principles and instructed the Reclamation Service to proceed along the lines which have been followed.

In nearly all of the large projects it has been necessary to complete important units in a certain progression. On some projects it is first necessary to secure the water by storage; on other projects it is of first importance to take such water as is available to the lands and demonstrate the feasibility of irrigation before the reservoirs are completed.

This was the case in the Truckee-Carson project. There were many alternative reservoir locations, any of which might ultimately be used, and if stored water could not be had immediately from one reservoir it might be had from another.

The first necessity in the present case was in extinguishing certain vested rights in connection with the distributing system. At the time work was begun in 1902 this seemed to be the most critical situation. With as full an understanding of the condition as it was practicable to obtain it was decided that this portion of the project should be taken up first. The legal complications at Lake Tahoe, while understood in part, have mainly developed since that time and could only be known after the work was well under way. Any criticism of the course pursued disappears when the facts are made known.

The draft of contract for Lake Tahoe storage as it now stands is the result of years of study, negotiation, and discussion by a considerable number of men. In the division of labor in the Reclamation Service I have left to Chief Engineer Davis the details of negotiation of this particular matter, and he has given it more thorough personal attention than myself. In fact, I may say that owing to pressure of innumerable details I have not entered into the actual negotiations.

The difficulties to be met in securing to the United States the use of the excess water of Lake Tahoe involve not so much the physical obstacles, but those which arise from vested rights and the indefinite condition of State and National law regarding the ownership and use of water.

Mr. Davis and his associates have patiently gone through all of the facts presented and have from time to time attempted to draw up agreements which would be satisfactory, but while any one man of the group which had studied the subject could draw up an instrument which suited his ideas it would not be acceptable to his colleagues nor to the representatives of the other party.

In short, every agreement of this kind, like legislative enactments, must be a matter of compromise. The practical question is not to secure the ideally best contract, but the one having the least objectionable features upon which both parties could agree.

This brings me to a point, namely, that any board or commission to consider this matter must not stop simply with discussing what would be the ideal agreement from the standpoint of the individual members, but what is the form of agreement which can be attained. The Government has very little power toward forcing any agreement. It may obstruct and delay and possibly injure the sale of stocks and bonds by bringing vexatious suits. Ultimately these suits must be terminated, and it seems to be the opinion of those best informed that a reliance upon procedure in the courts would at best secure no greater advantages to the United States and would lead to almost interminable delays. In other words, we might possibly gain some advantage by vexatious suits during their existence, but probably not through a successful termination of such suits.

The draft of contract now under discussion is the latest of a series of drafts. Its history is about as follows:

In the latter part of 1908 it became apparent that the negotiations then under way were not producing results, and it was seen that there was no alternative other than bringing suit for condemnation. Accordingly, the Attorney General was requested by the Secretary of the Interior to bring such proceedings under date of January 9, 1909.

On January 13 the Attorney General sent appropriate instructions to the United States attorney. Several communications then passed between the Reclamation Service and the United States attorney in San Francisco in regard to the suit and requesting that the same be expedited as much as possible. It appears, however, that the instructions of the Attorney General were by mistake sent to the United States attorney in Reno, Nev., which caused some delay.

Representatives of the owners of the land and rights involved in the meanwhile took up negotiations with the United States attorney with a view to delaying action.

On February 13 no action had been taken by the United States attorney toward instituting a suit, and the Secretary of the Interior forwarded to the Attorney General a statement of the history of the case for several months past, showing the efforts of the parties in interest to secure delay; and as more time had elapsed since the first request of the Secretary of the Interior than the 30 days provided for in section 7 of the reclamation act, a second request was made February 13 for the institution of these condemnation proceedings.

On February 17 the United States attorney wired the Attorney General that the defendants request proceedings be deferred until the following Tuesday (Feb. 23) because the commencement of suit will be injurious to them, to which the Department of Justice replied that the filing of proceedings might be deferred on guaranty that there should be no further delay after Tuesday. Complaint was finally filed on February 24.

On March 6, after a conference between the Reclamation Service and a representative of the persons interested, a letter was written to the Attorney General to the effect that the attitude of these persons indicated no prospect of an adjustment, and request was made that proceedings in eminent domain be pushed as actively as possible.

Summons was served in the case on March 17. Some further correspondence was carried on concerning this suit, but on March 23 negotiations were begun at Washington which culminated in the draft of contract now under consideration. The suit is still pending, and no action has yet been taken by the Reclamation Service to ask for a dismissal.

In the meantime there had been a change in the control of the land involved, and new parties assumed negotiations. The principal persons in this conference were A. P. Davis, chief engineer; Morris Bien, supervising engineer, in charge of Land and Legal Division; Mr. John C. Rice, of the firm of Gaston, Snow & Toltonstall, of Boston; and Mr. Charles F. Wallace, acting on behalf of Stone & Webster, a corporation of Boston.

The various drafts of agreement were discussed in Washington. and were forwarded to Boston and San Francisco for discussion by the various parties involved.

On April 22, 1909, Mr. Davis, as Acting Director, in the absence of Mr. Newell in the West, submitted to the Secretary of the Interior a draft of contract, with recommendation that the same be examined, and that the form be approved if found satisfactory.

At the same time there was transmitted a draft of letter to the Secretary of Agriculture reviewing the draft of contract and stating that it is believed that the contract involved full compensation to the United States for any use of the natural resources which is involved.

In the letter of transmittal of April 22 it is stated that "it is assumed that the contract will be thoroughly reviewed in the office of the Assistant Attorney General."

The draft of contract was the subject of frequent conference and discussion. In May it was taken to California by Mr. Oscar Lawler, Assistant Attorney General, who consulted fully with Mr. Devlin, the United States attorney for the northern district of California.

On May 7 Mr. Charles F. Wallace made certain suggestions and recommended that District Attorney Devlin be authorized to settle the matter. To these suggestions the Reclamation Service could not agree, and by letter to the Secretary on May 10 the Reclamation Service protested against the proposed changes in the agreement as being disastrous to the Truckee-Carson project.

On May 10 the Secretary of the Interior wired to Mr. Lawler, among other things:

> You are fully authorized to conclude terms. Send for Reclamation Engineer Hopson or Henny, Portland, or Means, project engineer, Fallon, Nev., for consultation, if necessary.

Mr. Lawler replied that he was detained by sickness, and on May 12 the Secretary of the Interior wired to Robert T. Devlin:

> You are fully authorized to conclude terms, but important to have advice of reclamation engineers in matters of compromise.

During the latter part of May and early part of June a number of conferences were held, and the draft as transmitted on April 22 was modified in many particulars.

On May 24, Messrs. Lawler and Devlin discussed the contract fully with Mr. E. G. Hopson, supervising engineer, continuing the discussion on May 25, 26, and 27. Mr. Hopson furnished Mr. Lawler with a full written statement dated May 26, reviewing the facts as to water supply, the reasons for acquiring control of Tahoe, a history of the negotiations, and giving various alternatives, concluding with the statement that prompt and definite action of some sort should be taken.

On May 29, after conference with Mr. Devlin, Mr. Oscar Lawler wrote to the Secretary from San Francisco discussing the situation.

On June 9 the draft of contract, revised somewhat from the form transmitted on April 22 and made so as to meet practically all of Mr. Lawler's suggestions, was again sent to the department by Mr. Davis. Certain additional objections were discussed, and on June 16 there was a personal conference with the Secretary by Mr. F. H. Newell, who had returned to the city, and Mr. Davis; Mr. Wallace and Mr. Rice representing the other party being also present. After these conferences it was stated that the objections hitherto raised had been met. The Reclamation Service had shown in its letter of June 16 that it was important to enter into the contract, as the benefits accruing resulted in large saving to the United States. The letter of June 16 was accompanied by memorandum analyzing the situation and reviewing some of the objections which have been raised.

At all times it has been recognized that there are objections, but that the contract was, all things considered, the best compromise which could be reached.

This memorandum of June 16 was prepared at the oral request of the Secretary in connection with his discussion of the contract with the President.

Immediately following this discussion of the matter and the filing of the memorandum, the Secretary on the evening of the same day notified the Truckee River General Electric Co. that—

> Upon presentation of a contract identical with this copy, duly executed, the same will receive my approval.

The contract was duly executed by the Truckee River General Electric Co. and in the course of time returned to the Reclamation Service. On July 21 it was forwarded to the department, with a statement that in accordance with Secretary's letter to the company of June 16 contract had been signed by the Director of the Reclamation Service, and was submitted for approval of the department.

There being further discussion of the subject, on August 15, Director Newell, at the oral request of Secretary Ballinger and in consultation with Chief Engineer Davis, prepared a further letter, meeting points brought out by an unsigned memorandum.

In brief, three alternatives have been presented:

First. Abandon Lake Tahoe and build storage reservoirs elsewhere at an immediate expense which, to secure an equivalent amount of water, might amount to a million dollars or more.

Second. Bring condemnation suit and acquire the outlet of Lake Tahoe, if this can be successfully prosecuted. We have already asked that a suit be brought, and urged that it be pushed, but there has been strong objection.

Third. Arrive at some form of agreement with the various parties in interest, and try to secure by the exercise of tact and business prudence what might otherwise be obtained in part by long and expensive condemnation suits.

The last is the alternative which most strongly appeals to all of us, and which we are attempting, at the same time not abandoning the condemnation case.

The question now is whether the negotiations which have been carried on in the past have resulted in the best obtainable agreement. Nearly every man who reads the agreement can find fault with it, and everyone of us who has had to do with it could have improved it individually, but it is not a question as to what each one of us individually thinks; it is a question of agreement among diverse minds. Although it has been examined by many lawyers representing the Government, no two have followed the same line of criticism, and the contract has been declared acceptable by several representatives of the Government who are presumably qualified to pass upon its legal features. Furthermore, any modification of the contract must be accepted by the other party.

Bearing the above facts in mind, a report by a board will have practically no value unless it results in suggesting a contract which will be acceptable to all the parties in interest, or in agreeing that the present contract is after all the best obtainable, certain modifications being made to clear up verbiage which as a result of searching criticism may be questioned as obscure or having a doubtful meaning.

Very truly, yours,

F. H. NEWELL, *Director.*

OCTOBER 7, 1909.

Hon. GEORGE OTIS SMITH,
Director of the United States Geological Survey.

MY DEAR MR. SMITH: I am greatly obliged to you for your kindness in arranging that Mr. Maltby should accompany Secretary Ballinger and yourself upon the examination of the Truckee General Electric contract in the field. I am glad the matter is successfully settled, and I thank you also for what you said about Mr. Dyar's work at the American Mining Congress.

Very truly, yours,

GIFFORD PINCHOT,
Forester.

OCTOBER 9, 1909.

Mr. W. W. DYAR,
Care of Forest Service, Denver, Colo.

DEAR MR. DYAR: In further reply to your letter of October 2 (filed here under "L, Special, Mining Congress, Cooperation"):

The substitution of Mr. Maltby's name for yours as the man to make the field examination on behalf of the Forest Service was made by Mr. Pinchot himself without suggestion from anybody and absolutely without reference to the other matters discussed in your letter. I had with considerable difficulty made arrangements for a conference with Mr. Maltby here and had summoned him in for that purpose, but Mr. Pinchot, knowing that he had been on the ground already and was thoroughly qualified as an electrical expert, the very best man in that capacity that we have, postponed the Washington conference indefinitely in order that Mr. Maltby might make the examination. I suggested that Mr. Merrill might do that work and Mr. Maltby fulfill his engagement here, but Mr. Pinchot overruled me.

You will thus see that this selection was made purely upon technical grounds, and that there was absolutely nothing personal in it on the part of anybody.

Very cordially, yours,
Philip P. Wells,
Law Officer.

Salt Lake City, Utah,
October 11, 1909.

The **Forester**, *Washington, D. C.:*

At Tahoe conference 8th it was decided as result of the disclosures we made concerning Truckee General Electric agreement to cancel it and instructions given to draft new agreement. Secretary Ballinger informed me he would report to President, who has taken special interest in matter. I expect arrive Auditorium Annex, Chicago, Thursday.

A. W. Maltby.

United States Department of Agriculture,
Forest Service,
Washington, October 11, 1909.

Mr. Gifford Pinchot,
Milford, Pa.

Dear Gifford: Maltby wires from Salt Lake City as follows:

> At Tahoe conference, 8th, it was decided as result of the disclosures we made concerning Truckee General Electric agreement to cancel it, and instructions given to draft new agreement. Secretary Ballinger informed me he would report to President, who has taken special interest in matter. I expect arrive Auditorium Annex, Chicago, Thursday.

He is evidently coming east for the power conference here, and I think it would be very desirable for you to see him some time during his stay if possible.

I leave Tuesday night for Boston and shall return here on Thursday.

Verry cordially, yours,
Philip P. Wells,
Law Officer.

United States Department of Agriculture,
Forest Service, District 5,
San Francisco Cal., October 14, 1909.

The **Forester**, *Washington, D. C.*

Dear Sir: On October 9 Mr. Maltby and I met Secretary Ballinger and his party at Tahoe Tavern to discuss the terms of the proposed agreement between the Truckee River General Electric Co. and the Reclamation Service. The Reclamation Service was represented by Supervision Engineer Hobson; Mr. Hill, engineer of the Yuma project; Mr. Means, engineer, and Mr. Hayes, assistant engineer of the Truckee-Carson project; and Mr. Chandler, water-law expert.

The entire contract was thoroughly discussed, and it is safe to say that if such action regarding it be taken as the Secretary there directed, nothing beyond paragraph 4 will remain in its present form and practically the entire contract will be rewritten. Every point made against the contract by Mr. Maltby in his letter to the Forester (D, policy, power, Truckee River General Electric Co. Reclamation Service agreement) of August 4, 1909, was sustained. The Secretary directed Mr. Chandler to keep notes of all objections and to have them corrected in the new contract.

Mr. Hobson, who appears to have been chiefly responsible for the contract from the engineering side, at first opposed any changes in the contract on the ground that "it is poor business" to revise a contract after it has reached the point of being signed by both parties. Later, however, he admitted that the contract as written failed to include the main features agreed upon by the engineers of the company and of the Reclamation Service, and that the contract, if carried out strictly as written, would leave the Truckee-Carson project, as far as any legal rights were concerned, in a worse situation than at present.

The following special matters were discussed:

Company's title.—Mr. Chandler refused to admit any doubt as to the perfect security and validity of the company's title to the outlet gates and to the water up to the capacity of their plant, stating that they had acquired an incontestable title by right of "user," and that the failure to renew their original franchise had no bearing on their present title.

Regulation of the second outlet.—The Reclamation Service engineers maintained that the word "regulation" as found in paragraph 5, line 19, meant "operation and control." The Secretary, however, disagreed, saying that use of different terms must of necessity require them to be interpreted as different acts.

Depth of second diversion.—Mr. Maltby suggested that a definite depth for the second diversion tunnel be inserted in the contract, and that it be made sufficiently low to allow of drawing down the lake below the present minimum level, if such action should be necessary to protect the irrigated lands in a season of excessive drought. He claimed that the property owners along the lake would not offer objections to such occasional action were it necessary to protect the irrigators from serious damage. Objections to this suggestion were made on the ground that the insertion of such a clause would arouse the fears of the littoral owners, and that work would probably be stopped by injunction. Mr. Hill suggested that this objection could be overcome by requiring the construction of a weir around the inlet of the tunnel which would limit the low-water level, and that in case of such necessity, as Mr. Maltby suggested, the weir could be broken through and afterwards reconstructed. The amended suggestion was approved.

Four hundred and seventy-five acre-feet limitation.—It was urged by Mr. Hill that this requirement be carefully reviewed by the engineers of both parties, and that the minimum limit be raised, if so desired by the company, in order to allow them to use the power plant from the second diversion as a "peak load" plant capable of caring for monthly or seasonal as well as daily "peaks." He claimed that it made very little difference to the Reclamation Service how the water was drawn from the second diversion, provided none should be allowed to waste from Lake Washoe. This matter will probably be reviewed and the quantity changed. No objection would lie against such a change if sufficient storage capacity were provided in Lake Washoe Reservoir so that all the water passing through the second diversion could be made available for use during the irrigation season.

Lake Washoe Reservoir.—Mr. Hobson stated on inquiry that it had been definitely agreed (verbally) that the water from the second diversion was to be re-stored in Lake Washoe, that this reservoir was to be constructed with a capacity of 168,000 acre-feet, that the gates at the outlet were to be operated and controlled by the Reclamation Service for irrigation purposes only, and that it was the intention to draw 1,500 second-feet from this reservoir during the irrigation season. When asked why these matters were omitted from the contract, he replied that it was at the suggestion of the company, who feared that if the location of their proposed reservoirs were made public they would be obliged to pay a higher price for the lands which they would require.

Mr. Maltby urged that definite maps and plans be required of the reservoirs, tunnel, canals, power-house locations, etc., for the utilization of the water from the second diversion and that such maps and plans be made a part of the contract. While this suggestion seemed favorably received it is uncertain whether the action will be taken.

It seems to be the intention of the company, as stated by Mr. Means, to construct a power plant at the head of the Steamboat Valley to utilize the water from Lake Washoe Reservoir. According to the verbal agreement this plant could be operated during the irrigation season only, since that would be, in general, the only period during which water would be drawn from this reservoir, if the gates were operated and controlled by the Reclamation Service.

It is believed that the Secretary will require that part of the contract which relates to the utilization and storage of the water from the second diversion to be drawn in definite terms so as to include all the features verbally agreed to by the parties and as enumerated above.

Other reservoir sites.—It was brought out in the discussion of this subject that under the verbal agreement the company "must," not "might," construct reservoirs on the watershed of the Little Truckee River for the purpose of satisfying vested interests on the Truckee River above Clarks Station, Nev. Mr. Means stated that the company's engineers are already making surveys of such sites. These reservoirs, not being "for the use and benefit of the Truckee-Carson project," will be operated and controlled by the company in such manner as they desire.

Damages for discharge of 2,500 second-feet.—It was admitted without question that the provisions in paragraph 8, stating that the United States should not be liable for damages caused by a "discharge of 2,500 cubic feet of water per second from Lake Tahoe into Truckee River" was incorrectly stated and that it should read and was intended to read "up to and including 2,500 cubic feet of water per second."

National-forest lands involved.—While no mention was made of Forest Service interests or national-forest lands as such, Mr. Means said that of the entire area that could be utilized as reservoir sites less than 3 per cent was public land, and that he believed the advantages which the Reclamation Service would receive under an agreement so drawn as to contain all the features verbally agreed upon would warrant a waiver of rights by the United States in the small area of public lands involved.

In my report "On the possible power developments of the watershed of the Truckee River above Clarks Station, Nev.," Table No. 13, page 133, shows that of a total area of 11,167 acres which might be flooded by the construction of all the reservoirs reported upon, but 224 acres, or 2 per cent, would be national-forest land. Table No. 14, page 135, shows that of a total estimated length of conduits of 63.75 miles but 4.25 miles would be on national-forest land, and of a total estimated length of transmission lines of 96.75 miles but 4.50 miles would be on national-forest land. Furthermore, it is entirely probable that if the power developments as outlined in the above-named report were made, conduits and transmission lines, particularly the latter, could be so located as to avoid all national-forest land.

United States alone to exercise control.—In the discussion of paragraph 12, particularly of the words "no person, firm, or corporation, other than the United States, and no assign of the United States, whether by statute or otherwise, shall have any right to regulate or control the outlet work of the company under this agreement," it was stated that the company had insisted upon this stipulation for fear that, upon the completion of the Truckee-Carson project, the control of the works might be turned over, together with the land to a "water-users' association," or similar organization representing only irrigation interests, and that the rights of the company might be jeopardized by such control. The Secretary stated that the clause as drawn is illegal in that it would bind the action of future Congresses, and that the clause would need to be rewritten so as to provide that control and operation should be exercised by such agent or agents as Congress might direct.

Advantages of the contract to Truckee-Carson project.—It was stated by the Reclamation Service engineers that the agreement, if drawn as intended, would be of great advantage to the Truckee-Carson project. The waters drawn from Lake Tahoe through the second diversion would be stored in the Lake Washoe Reservoir up to a capacity of 168,000 acre-feet, all of which would be available, under their operation and control of the Lake Washoe outlet works, for irrigation uses during the irrigation season. Any discharge from Washoe during the nonirrigation season would be at the option of the Reclamation Service and would be exercised only in seasons of high run-off. Even this water could be stored again in the Lower Carson Reservoir, which it is proposed to construct.

Of the water stored on the Little Truckee watershed, 25 per cent would be available for use during the irrigation season. The remaining 75 per cent, discharged after the close of the irrigation season and during the period of low flow in the streams, could be taken u by the Truckee-Carson canal at Clarks Station and conducted thence to the above-named Lower Carson Reservoir, from which it could be drawn for use during the following season. Mr. Means stated that, in his opinion, the storage of water by the company on the Little Truckee watershed would be to the distinct advantage of the Reclamation project for the reasons stated above, and that it would be far more costly for the Reclamation Service to construct the several reservoirs on the Little Truckee than to construct a reservoir of equivalent capacity on the Lower Carson.

In my report of September 20 it is stated, on page 136:

> A grant to the company of the right to construct reservoirs on the watersheds of Donner and Prosser Creeks and of the Little Truckee River would deprive the Truckee-Carson project forever of 75 per cent of the water that might be made available were these sites developed by the Reclamation Service for the sole use and benefit of the reclamation project, unless the Reclamation Service shall construct, lower down on the streams, hold-over storage reservoirs of an equivalent capacity.

It appears to be the intention to construct such a reservoir on the Lower Carson River and hence this objection would be removed.

If the contract be redrawn to include in express terms all the features that the Reclamation Service engineers stated were clearly understood by the parties to the contract, little or no specific objection could be made to the terms of the contract. The Truckee-Carson project would undoubtedly receive a largely increased quantity of water for irrigation purposes, of a value, as estimated by Mr. Means, of $700,000. On the other hand, the company will secure very valuable concessions, particularly the right to take water through the second diversion.

The question of the advisability of granting a right in perpetuity the Reclamation Service men seemed disinclined to discuss, and the matter was not pressed. It is their evident purpose to put the contract through. Whether the representatives of the company will again be able to keep the greater part of the agreement merely verbal is a matter of conjecture only. It is improbable, however, that a contract similar to the present one will be allowed to pass. The attitude of the Secretary seemed to be distinctly in favor of the proposed amendments.

It is difficult to understand how the defects in the contract could have escaped the notice of the men who are chiefly responsible for it. The Reclamation Service representatives insisted before the conference that the contract was "all right," but admitted afterward that under its terms they would have lost all the rights they now possess and gained nothing in return. Even Mr. Chandler declared he had read the contract over several times on the preceding day and failed to see any defects in it. The only explanation that I can personally make is that the engineers of the Reclamation Service had so firmly fixed in their minds, from their many discussions of the subject with the company's engineers, the features of the arrangements they were expecting to make and trusted so much to the "gentlemen's agreement" of the other side that they failed to see how little of this agreement was written into the contract. It is more difficult yet to explain or to understand the attitude of the legal department.

Very truly, yours,

O. C. Merrill, *Engineer.*

OCTOBER 22, 1909.

DISTRICT FORESTER,
San Francisco, Cal.

DEAR MR. OLMSTED: Mr. Merrill's report of October 14 (D, Tahoe, uses, Truckee River General Electric Co., Reclamation Service agreement), together with his report on the possible water-power development of the watershed of the Truckee River above Clarks Station, Nev., dated September 20, and the topographic map and status map accompanying the last-named report, are received.

With reference to the first-named report: Mr. Maltby was in Washington yesterday and spent the greater part of the day with me in conference with the Director and chief law officer of the Reclamation Service discussing the defects of the contract as now drawn. The objections to the contract stated by Mr. Maltby and Mr. Merrill are undoubtedly sound. The Forester has expressed to Mr. Maltby his appreciation of his efficient service to the public in this matter, and desires that you convey a similar expression to Mr. Merrill.

In addition to the points made by Mr. Maltby and Mr. Merrill, the contracts seem open to other grave objections, namely:

1. Though the status map above referred to shows that there are no lands of the United States on the line of the proposed tunnel for the second diversion, it seems to show such lands within the proposed Washoe Reservoir and on the line of the proposed power canal below that reservoir. Moreover, the contract does not restrict the company to the above-described location of the second diversion, and therefore might be used by the company as a permit for the use of Government lands in another location. The position of the Forester is that power concessions on any national forest lands are by law prohibited to be in perpetuity, and as a matter of policy must be for a restricted term upon conditions of payment to the Government and stipulations for the prevention of the evils of power monopoly.

2. As chairman of the National Conservation Commission, the Forester has a legitimate interest in the policy as to power concessions pursued by the Government with respect to lands of the United States not within national forests, and believes them to be subject to the same statutory prohibition of perpetual grants. Though the Tawney amendment to the sundry civil bill passed at the last session of Congress forbade the expenditure of any appropriation made by Congress for the payment of the expenses of any commission not authorized by Congress, and said that service by any public officer upon or in connection with such commission was prohibited, nevertheless the President has assured the commission that it is still in existence, and that he expected to secure a special appropriation for its use. Mr. Pinchot has therefore continued to consult the President upon matters affecting the conservation movement outside the national forests.

Very sincerely, yours,
PHILIP P. WELLS,
Law Officer.

[Memorandum for O. G.]

OCTOBER 22, 1909.

Please deposit in the vault the two annexed maps in a package labeled "Topographic and status maps accompanying report on the possible water-power development of the watershed of the Truckee River above Clarks Station, dated September 20, 1909, by O. C. Merrill."

P. P. W.

DEPARTMENT OF THE INTERIOR,
UNITED STATES RECLAMATION SERVICE,
Washington, D. C., October 25, 1909.

Mr. GIFFORD PINCHOT,
Forester, United States Forest Service,
Washington, D. C.

MY DEAR MR. PINCHOT: Referring to our conversation with Mr. Maltby regarding the Lake Tahoe, Nev., contract, I hope that you will send me a copy of his report, so that I may study the situation carefully.

Very truly, yours,
F. H. NEWELL,
Director.

OCTOBER 30, 1909.

Mr. A. W. MALTBY,
Concord, Cal.

DEAR MR. MALTBY: Mr. Wells has left the city to meet Mr. Pinchot at New Orleans. Director Newell, of the United States Reclamation Service, by letter of October 25, writes the Forester as follows:

> Referring to our conversation with Mr. Maltby regarding the Lake Tahoe, Nev., contract, I hope that you will send me a copy of his report, so that I may study the situation carefully.

Mr. Wells requested me to inform you that Mr. Newell would be sent a copy of your report unless you object to its being sent. Please inform the Forester by wire if you have no objection. I am telegraphing you to this effect to-day, in case you have already reached your home from your trip east.

Very sincerely, yours,
W. J. MANGAN,
Acting Law Officer.

[Telegram.]

WASHINGTON, D. C., *October 30, 1909.*

Mr. A. W. MALTBY,
Concord, Cal.:

Director Newell makes formal request for your report. Will send copy have on file unless you object.

WELLS.

[Telegram.]

NEW ORLEANS, LA., *November 2, 1909.*

PRICE,
Forestry, Washington, D. C.:

Please rush Plummer on special work he is doing for me.

WELLS.

NOVEMBER 16, 1909.

Mr. F. H. NEWELL,
Director United States Reclamation Service,
Washington, D. C.

MY DEAR MR. NEWELL: Your letter of October 25 was received in my absence from the city. Mr. Wells telegraphed to Mr. Maltby, informing him that you had requested a copy of his report and asking him if he had any objection to our sending it. It is probable that the telegram has not been called to Mr. Maltby's attention, since he has not acknowledged receipt of it. I have therefore had a copy of the report made for you and inclose it with this letter.

Very sincerely, yours,

GIFFORD PINCHOT, *Forester.*

APPENDIX I.—APPLICATION OF THE DONNER LUMBER & BOOM CO. FOR THE POWER TO COLLECT TOLLS ON THE TRUCKEE RIVER.

It appearing to the board from the affidavits of E. J. Brickell, Warren Richardson, Charles Dunn, and Robert D. Hart and filed herein that said company has complied with the provisions of an act of the Legislature of the State of California entitled "An act to authorize the Donner Lumber Co., their agents and assigns, to improve the channel of the Truckee River from its source to the town of Truckee and erect flood gates therein and collect tolls," approved April 4, 1870, have expended the full sum of $25,000 as provided in said act and have fully complied with the conditions of said act, it is therefore ordered that said Donner Lumber & Boom Co., having fully complied with the provisions of said act and having expended the sum therein specified, be, and it is hereby, authorized to collect tolls as provided in said act. Saturday, November 6, 1875.

V. V. MANN, *Chairman.*
JAS. LAIRD,
A. J. SOULE,
S. B. HARRISON,
Supervisors.
S. F. BURKE, *Clerk.*

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62D CONGRESS } HOUSE OF REPRESENTATIVES { DOCUMENT
2d Session } { No. 490

MOBILE ARMY OF THE UNITED STATES

LETTER FROM THE SECRETARY OF WAR

TRANSMITTING

IN RESPONSE TO HOUSE RESOLUTION NO. 343, INFORMATION CONCERNING THE DISTRIBUTION OF THE MOBILE ARMY OF THE UNITED STATES AND THE NAMES OF ARMY POSTS WHICH HAVE BEEN LOCATED IN THEIR PRESENT SITUATIONS FOR REASONS WHICH ARE NOW TOTALLY OBSOLETE

JANUARY 29, 1912.—Referred to the Committee on Expenditures in the War Department and ordered to be printed

WASHINGTON
1912

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

DISTRIBUTION OF THE MOBILE ARMY OF THE UNITED STATES.

Office of the Secretary of War,
Washington, January 25, 1912.

The Speaker of the House of Representatives,
Washington, D. C..

Sir: In compliance with the request contained in House resolution 343 I have the honor to submit the following information covering the statements made in my annual report for the year 1911, concerning the distribution of the mobile Army of the United States.

(1) The names of all Army posts which have been located in their present situations for reasons which are now totally obsolete:

Fort Apache, Ariz.,[1] established 1870, to protect the settlements against raids of Apache Indians.

Boise Barracks, Idaho, established 1863, to protect emigrant trains against the Shoshone Indians.

Fort Clark, Tex., established 1853, to guard the San Antonio and Eagle Pass wagon road and for the protection of the Rio Grande border against depredations by Mexicans and Indians.

Fort D. A. Russell, Wyo., established 1867, to protect the Union Pacific Railroad in this vicinity and the lines of travel south to Denver and north to Fort Laramie and beyond from attacks by the Arapahoe Indians.

Fort Douglas, Utah, established 1858, on account of trouble with the Mormons and to prevent depredations by Indians along the line of the overland mail route.

Fort Huachuca, Ariz., established 1881, for protection against depredations by Indians and cattle thieves.

Fort Leavenworth, Kans., established 1827, as an outpost to protect the Santa Fe trail against Indians, principally the Delawares and Pawnees.

Fort Mackenzie, Wyo., established 1898, as a central post in the vicinity of the large Indian reservations of Wyoming, Montana, and South Dakota, including the Crows, Northern Cheyennes, Shoshones, Sioux, and the Brules. The establishment of this post enabled old Forts Custer and Washakie to be abandoned.

Fort Meade, S. Dak., established 1878 to protect citizens of the Black Hills country from hostile attacks of the Sioux and other Indian tribes congregating in or inhabiting that locality.

Fort Missoula, Mont., established 1877 as a restraint upon Flathead Indians living in the vicinity.

Fort Riley, Kans., established 1853 to protect the advancing line of settlement toward the new territory acquired in the southwest as a result of the Mexican War.

Fort Robinson, Nebr., established 1874 near the Red Cloud Indian Agency, around which were gathered about 12,000 Indians, mainly Ogalala, Sioux, Cheyennes, and Arapahoes.

Fort Sill, Okla., established 1869 as the base of operation against the hostile Cheyennes and Kiowas.

Fort Snelling, Minn., established 1820 as an extreme outpost in the Indian country.

While all these posts were established for reasons that are now obsolete, new conditions have since arisen which may require the continuance of a number of them.

---

[1] A possibility of Indian trouble still exists.

(2) The names of all Army posts which have been located in their present situations for reasons which were from the beginning purely local:

This includes most of the posts which were established for Indian troubles, most of which were purely local.

Fort Apache, Ariz.
Boise Barracks, Idaho.
Fort Clark, Tex.
Fort Huachuca, Ariz.
Fort Mackenzie, Wyo.
Fort Meade, S. Dak.
Fort Missoula, Mont.
Fort Robinson, Nebr.
Fort Sill, Okla.
Whipple Barracks, Ariz.

(3) The names of all Army posts which were originally placed where they are with reference to possible Indian troubles, and the names of such of these as may be placed where such troubles now are no longer possible:

Boise Barracks, Idaho.
Fort D. A. Russell, Wyo.
Fort Douglas, Utah.
Fort Leavenworth, Kans.
Fort Mackenzie, Wyo.
Fort Meade, S. Dak.
Fort Missoula, Mont.
Fort Riley, Kans.
Fort Robinson, Nebr.
Fort Sill, Okla.
Fort Snelling, Minn.

Forts Clark and Huachuca were established not only with reference to possible Indian troubles, but to meet the possibility of cattle raids across the border.

(4) The names of all Army posts which are situated in positions suited to meet the strategic needs of national action or defense; and (7) the present intention of the War Department with respect to recommending legislation with a view to putting an end to the present extravagant distribution of the Army, and the steps, if any, already taken or now being taken by the department in preparing such recommendations.

It is deemed essential to discuss these two requirements together for the reason that a study of the subject of the distribution of the Army to meet the strategic needs of national action or defense necessarily involves also a careful consideration of the subject of economy of administration and supply. The two are inseparable, and any list submitted in accordance with the fourth requirement as given above would convey little meaning unless accompanied by an outline of the policy and intention that dictated such selection.

A careful study of the organization and distribution of the mobile forces of the Regular Army, both at home and abroad, is now being made by a committee of the General Staff. This subject is being considered in great detail, and upon the completion of this work and its approval by the Secretary of War, it will represent the complete policy of the War Department in this regard.

In the preparation of this study it is assumed:

First. That the strength of the mobile Army is to be the minimum consistent with present requirements.

Second. That with the troops available, adequate forces must be provided for our foreign garrisons, bearing in mind the distinct tactical mission that each has to perform in case of war. As it is very probable that these organizations can not be augmented by reenforcements from the United States after the outbreak of hostilities, it is essential that they be kept at full war strength at all times.

Third. That with the remainder a mobile force is to be organized and strategically distributed within the United States.

This study is therefore proceeding in the following logical order:

1. A determination of the mobile forces immediately required for the defense of the Philippines, Panama, Oahu, Porto Rico, and Alaska.
2. A determination of the most effective and economical means of establishing these foreign garrisons with the mobile forces now organized or authorized by Congress.
3. Plans for the organization of the mobile forces not required for foreign service into a field army at home, even though the troops now available for this purpose be inadequate for the completion of the necessary tactical and administrative units.
4. A determination of the regular mobile forces necessary for the full military security of the United States, with a view to indicating the further reforms that must wait upon the action of Congress.

This study, in so far as it concerns the Philippines garrison, has been completed and the recommendations contained therein have been approved by the Secretary of War, who is now taking steps to inaugurate the changes proposed, it is expected, without going beyond the current appropriations.

The details in regard to the organization and distribution of that portion of the mobile Army remaining within the territorial limits of the United States after the necessary detachments have been made for foreign service have not been worked out as yet, but the general conclusions of the board may be briefly summarized as follows:

If the mobile Army is to be efficient its distribution must meet the following requirements:

1. It must be favorable for the tactical training of the three arms combined (Infantry, Cavalry, and Field Artillery).
2. It must be favorable for the rapid concentration of the Army upon our northern or southern frontier or upon our eastern or western seaboard.
3. It must favor the best use of the Army as a model for the general military training of the National Guard.
4. It must favor the use of the Regular Army as a nucleus for the war organization of the National Guard and such volunteer forces as Congress may authorize to meet any possible military emergency.
5. The distribution must favor economical administration with the view of developing the maximum return for the money appropriated for military purposes.
6. The distribution must permit a peace organization which will also be effective in war; that is, an organization which will permit a prompt expansion in time of war by means of a system of reserves.

These requirements can best be met by correcting the present dispersion of the mobile Army. The mobile Army is now scattered in 49 posts. It should be segregated into detachments of all arms, each of which can be readily assembled for team training by reasonable marches of concentration. Each of the several tactical groups should be stationed in the vicinity of strategic centers where facilities are favorable for transportation, administration, and supply. The exact location of these centers should depend upon a careful study of many considerations, but they may be approximately indicated as follows:

1. Two, and possibly three, groups on the line between the St. Lawrence and Atlanta, covering the Atlantic seaboard.

2. Two and possibly three groups on the line between Puget Sound and Los Angeles, covering the Pacific seaboard.

3. At least two groups between the Great Lakes and the Rio Grande serving as first reserves for either seaboard and as nuclei for the development of the National Guard and volunteer forces to be organized in the interior of the continent.

The number of groups to be organized is primarily restricted by the total strength of the mobile Army. No group should contain less than a brigade of Infantry with a proper proportion of Cavalry, Field Artillery, and special troops, and at least one group should contain a full tactical division. Proper tactical training demands the combined use of the three arms, and this can be secured only by massing the troops of each group in a single post or in several posts within marching distance of a common center. Without such concentration joint training can not be secured except at heavy expense for transportation. In addition to these detachments of all arms, there should be at least two independent Cavalry brigades.

A study of the question indicates that the stationing of our present mobile Army in more than eight or possibly nine such groups would be inconsistent with the demands of maximum economy and tactical efficiency.

The solution of this problem is apparently complicated by the fact that the posts now occupied by the mobile Army represent a large investment which must be abandoned if an efficient plant is to be established. But while most of the posts now occupied have lost their military value, the national military reservations have acquired a great value as real estate. As a business proposition it should be possible to refund the investment and largely finance the relocation of the Army from the proceeds of the sale of the real estate which is no longer needed for military purposes. The project would be similar in many respects to the Reclamation Service as now established by Congress. In that service a fund is formed from the proceeds of the sale of certain public lands, and from this fund certain approved projects are successively executed under general rules prescribed by Congress.

It is believed that the Army can in this way be scientifically distributed at an expense little if any in excess of the proceeds of the sales of the properties to be abandoned.

Studies at the War College indicate that if the present mobile Army were concentrated in eight posts, its cost would be reduced by about $5,500,000 per annum. In six years this saving would pay for the new quartering of the mobile Army, even if nothing could be realized from the sale of real estate no longer needed.

Having in view a distribution for military efficiency and economy, it may be said that the following posts are so located as to permit their being retained as nuclei or elements of strategic concentration groups:

Fort Porter, Buffalo, N. Y.—A large post or group of posts in the Buffalo or Albany region would meet all of the requirements referred to on page 5.

There is no post at Albany at present. To concentrate all of the mobile troops allotted to the North Atlantic seaboard at this place would tend to produce the maximum effectiveness of the troops, and the maximum economy of administration and supply. The radiation of railways from Albany would facilitate the dispatch of all or part of this force to any possible theater of operations in the North Atlantic region.

But the exact location of such a center of future concentration can only be made after a detailed study of the whole region with special reference to facilities for training. While Albany appears to possess the greatest sum of advantages in the North Atlantic region, it should be noted that the railways radiating from Buffalo are more numerous and lead toward Chesapeake Bay as well as toward New York and New England. It is safe to say that the troops in the North Atlantic region should be located on the general area between Buffalo and Albany, but the ultimate solution of the problem must rest upon a full consideration of all economic and strategic factors, and it can not be safely predicted at this time. If all or part of the troops in this region should ultimately be stationed in the vicinity of Buffalo Fort Porter, or some site near Buffalo, to be exchanged for Fort Porter, would have undoubted strategic value. After the determination of such a center, every step toward the concentration of troops at that center would be a step toward economy, tactical efficiency, and strategic effectiveness.

Fort Oglethorpe, Ga.—Near Chattanooga, Tenn. A desirable center, especially for a Cavalry brigade.

Fort McPherson, Atlanta, Ga.—A desirable center on account of the strategic location of Atlanta with reference to the South Atlantic and Gulf coasts.

Fort Sam Houston, Tex.—The best strategic position for the southern frontier.

Fort Lawton, Wash. (near Seattle), and Vancouver Barracks, Wash. (near Portland).—These posts are near the center of the Puget Sound strategic group, and one or both of them may be retained as stations in the group.

The Presidio of San Francisco, Cal., and the Presidio of Monterey, Cal.—One or both of these posts may properly be included in the California strategic group.

In each of the following groups one or more posts may properly be retained as nuclei or elements of strategic concentration centers:

GROUP I: Fort Benjamin Harrison, Ind.; Columbus Barracks, Ohio; Fort Sheridan, Ill.

As one of the future concentration groups should be in the geographical region occupied by these posts, one or more of them may be retained as stations in the group.

Maximum economy and effectiveness would no doubt be secured by concentrating all of the troops in the region in one post or in a group of posts at one center of population, but practical considerations may prevent the full attainment of this ideal. The ultimate determination of the center must wait upon a more detailed study of the region. If the general concentration is approved, this region should be studied by a special board of officers with instructions to report upon the most advantageous location of posts, the reasons for such locations, and the extent to which existing posts can be retained without prejudice to the economic and military interests of the Government.

GROUP II: Fort Des Moines, Iowa; Fort Crook, Nebr.; Fort Omaha, Nebr.; Fort Leavenworth, Kans.; Fort Riley, Kans.; Fort Snelling, Minn.; Jefferson Barracks, Mo.

As one of the future concentration groups should be in the geographical region occupied by these posts, one or more of them may be retained as stations in the group.

Maximum economy and effectiveness would no doubt be secured by concentrating all of the troops in the region in one post or in a group of posts at one center of population, but practical considerations may prevent the full attainment of the ideal. The ultimate determination of the center must wait upon a more detailed study of the region. If the general concentration is approved, this region should be studied by a special board of officers with instructions to report upon the most advantageous location of posts, the reasons for such locations, and the extent to which existing posts can be retained without prejudice to the economic and military interests of the Government.

In this group Fort Omaha, Fort Crook, Fort Des Moines, and Fort Leavenworth are each about 100 miles from a common center.

Fort Snelling and Jefferson Barracks are too distant from the other posts of the group to permit of concentration with the other units of the group for instructional purposes. Efficiency demands therefore that they should not be retained unless it is decided to make them stations for detachments of all arms. Fort Riley, with its reservation of 19,000 acres, will serve as a suitable station for a cavalry brigade and if used for this purpose will be near enough to the other stations of the group.

The following posts can not be included in the general system of strategic centers, but should be retained for the special reasons indicated in each case.

Fort Sill, Okla.—The large reservation available at this station is peculiarly adapted for use as a school of Artillery and musketry fire.

Fort Bliss, Tex., and Fort Huachuca, Ariz.—The retention of these posts as Cavalry subposts on the southern border will probably be necessary for some time.

Fort Myer, Va.—It will probably be necessary to retain a small garrison near the National Capital for escort duty and other ceremonial purposes.

(5) The names of all posts which have been constructed during the 10 years ending June 30, 1911, upon a plan which involved maximum initial cost of construction and maximum cost of maintenance in money and men; the amounts expended on such posts, respectively, for construction purposes during the said period, and what military necessity, if any, suggested the construction of such posts:

Names of posts:	Cost of construction.
Fort Benjamin Harrison, Ind	$1,202,966.7
Fort Davis, Alaska	76,936.
Fort Des Moines, Iowa	1,377,404.
Fort Liscum, Alaska	87,321.
Fort Oglethorpe, Ga	1,499,884.
Presidio of Monterey, Cal	377,263.
Fort Sill, Okla. (new post)	1,255,288.
Fort Wm. H. Seward, Alaska	662,539.
Total	6,539,605.

The names of all other posts where any construction work h been carried on during the 10 years ending June 30, 1911, upon plan which involved maximum initial cost of construction a maximum cost of maintenance in money and men; the amounts expended on such posts, respectively, for construction purposes during the said period and what military necessity, if any, suggested the new construction:

Names of posts:	Cost of construction.
Fort Apache, Ariz	$40,112.62
Fort Bliss, Tex	204,849.12
Boise Barracks, Idaho	361,625.48
Fort Brady, Mich	211,088.28
Fort Clark, Tex	18,679.55
Fort Crook, Nebr	328,400.23
Fort D. A. Russell, Wyo	4,893,164.29
Fort Douglas, Utah	730,123.72
Fort Ethan Allen, Vt	937,674.97
Fort George Wright, Wash	530,989.78
Fort Gibbon, Alaska	155,294.07
Fort Huachuca, Ariz	88,602.83
Fort Jay, N. Y	213,592.84
Fort Lawton, Wash	503,013.36
Fort Leavenworth, Kans	3,705,763.96
Fort Lincoln, N. Dak	536,839.34
Fort Logan H. Roots, Ark	212,257.99
Fort Mackenzie, Wyo	1,120,268.50
Madison Barracks, N. Y	331,285.92
Fort Mason, Cal	123,130.09
Fort McIntosh, Tex	162,937.55
Fort McPherson, Ga	526,227.46
Fort Meade, S. Dak	995,335.36
Fort Missoula, Mont	551,478.30
Fort Myer, Va	878,712.86
Fort Niagara, N. Y	272,012.50
Fort Ontario, N. Y	548,907.30
Plattsburg Barracks, N. Y	253,822.99
Fort Porter, N. Y	21,813.47
Presidio of San Francisco (Infantry cantonment)	308,056.88
Fort Riley, Kans	2,590,988.03
Fort Robinson, Nebr	648,903.88
Fort St. Michael, Alaska	46,355.50
Fort Sam Houston, Tex	2,610,531.63
Fort Sheridan, Ill	941,815.23
Fort Snelling, Minn	1,464,852.73
Vancouver Barracks, Wash	879,632.50
Fort Wayne, Mich	331,954.95
Whipple Barracks, Ariz	568,130.60
Fort Wm. H. Harrison, Mont	137,972.02
Fort Yellowstone, Wyo	659,604.02
Total	30,645,797.76

While in some cases only a small amount has been expended on onstruction, the plan in all has been that of a scattered garrison nvolving maximum expense for sewer, water, light, and communicaion systems and the maximum cost in money and men for mainteance and protection.

The new construction mentioned in this paragraph was made ecessary to provide additional shelter for the Army which had been reatly increased under the act of Congress, approved February 2, 901, and to replace old buildings.

(6) The specific steps taken by the several Secretaries of War uring the period of 10 years ending June 30, 1911, to prevent unnecssary expenditures and impairment of efficiency caused by illdvised location and construction of posts and inefficient distribuon of the mobile Army, and the reasons, as far as they can be

assigned, why the successive heads of the War Department have been unsuccessful in preventing unnecessary expenditures and impairment of efficiency:

In 1901 Secretary Root decided that a more concentrated system of garrisoning the mobile Army was necessary for economical administration and efficient training. Accordingly, he appointed a board of general officers to consider and make recommendations on the subject.

The failure of this effort is easily traceable to three causes.

First. Lack of appreciation on part of the Army itself of the importance of concentration.

The Army leaders had grown old under a system of scattered posts due to former Indian troubles. The board of general officers recommended 52 of the 65 Army posts for permanent occupation, 13 for temporary occupation, and the establishment of 7 new posts. Army Regulations stated nothing as to the importance of combined maneuvers, but dwelt strongly on the post commander's duty to make his post "an attractive home for the Army by every means available." For years a beautiful parklike reservation had been the surest means of gaining for the commanding officer favorable mention at the annual inspection. There had been no General Staff to consider the needs of the Army as a whole, no Chief of Staff to coordinate the idea of progressive subordinates and recommend the proper course of action. As a whole, the Army was not aware of its own shortcomings.

Second. The necessity for housing troops returning from the Philippine Islands.

The termination of active hostilities was permitting the return of many troops who had to be cared for. This led the board to recommend for temporary occupation 13 posts that were slated for ultimate abandonment. Had the troops been made to live at these posts, despite the poor condition of many, with the minimum expenditure possible for repairs until large concentrated posts had been built, millions would have been saved. But, as stated, no definite idea of concentration existed, and great pressure was brought to bear to make the existing posts comfortable. The matter of abandonment was in abeyance, and in the reconstruction of posts ultimate economy was sought by making the buildings of a more durable type—brick, stone, and concrete. Had this been done at a concentrated post the end sought would have been gained, but unfortunately the "beautiful park" idea was still in the ascendant, and the Army was saddled with the expense of maintenance of extensive roads, walks, gardens, lawns, and systems of lighting, water supply, and sewerage. Buildings of a type now recognized as extravagant were constructed. The lighting and heating of the quarters became a severe drain upon the officers' pay, until Congress came to their relief and authorized an allowance of fuel and light.

The amounts expended upon these posts became an argument against their abandonment. It seemed wrong to spend large sums of money to make a post habitable, then to withdraw the troops. Throughout the last 10 years records show this argument recurring to prevent recommended concentration being effected, while good money was thrown after bad, perpetuating the very conditions which it was desired to avoid, the pressure of immediate needs being always greater than the pressure for a distant and more or less indefinite policy. Doubtless this argument will again be used to prevent the concentration desired by the present Secretary of War, and unless approached in the spirit of a great business corporation which ruthlessly tears down a six-story building no longer suited to its needs to erect the 20-story building found necessary, the present movement for an efficient and economically administered Army will fail as have preceding efforts.

Third. Local and political influences.

Scarcely had Mr. Root appointed his board when the War Department was deluged with letters protesting against the abandonment of certain posts, urging the extension of others, and recommending the establishment of new. These letters were from private citizens, from boards of trade, from city councils, from mayors, from governors and from Members of Congress. The reasons urged[1] varied from "the people of this community are peaceful, law-abiding, hospitable, and patriotic" to "there are 40,000 Indians near this point" and from "a beautiful site with 17 railroads radiating in every direction" to "we would find it hard to square ourselves with the community if our promises are not made good."

It seems impossible to judge the effect these letters and certain resolutions of Congress may have had upon the board and upon the War Department; a careful reading of the record and the results indicate it to have been great. We find in addition to the enlargement of many posts the following posts established without the recommendation of the board: Fort Benjamin Harrison, Ind.; Fort Des Moines, Iowa; Fort Seward, Alaska; Presidio of Monterey, Cal.; and Whipple Barracks, Ariz. Of these posts the first two were established by act of Congress.

Throughout his incumbency as Secretary of War, Mr. Root continued to represent the advisability of concentration, and actually effected it in Porto Rico. Our present large posts were started during those years, enabling better training to be given a portion of the mobile Army, but the abandonment of small posts made little progress. It is known that he urgently fought the reestablishment of Whipple Barracks, Ariz., and asked that the appropriation be stricken from the sundry civil bill, as it would compel him "to throw away $50,000 against his official judgment." Nevertheless, the post was reestablished and over half a million expended in rebuilding it. It accommodates a battalion of Infantry (peace strength). The same amount would build about one-fourth of a concentrated post for a brigade. Fifteen thousand dollars have been spent on repairs at this post during the past three years.

In 1905, the Secretary of War (Mr. Taft) urged the abandonment of posts smaller than a battalion. He brought forward the idea also of permanent stations for units and the discontinuance of frequent changes of stations. The tactical concentration of troops for training of the three arms combined had not yet been thought of, nor had it yet been appreciated that the enlisted man wanted to be a soldier instead of a laborer.

In 1906 Mr. Taft made the recommendation for the Army to be concentrated in brigades and regimental posts. He made definite recommendations for six brigade posts, and stated that there should be eight in all. It is noted that prior expenditures governed his selection, as four of the posts recommended were those on which the greatest amounts had been expended. The garrisons were withdrawn from eight of the smaller posts in 1905 and 1906.

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[1] See H. Doc. No. 618, 57th Cong., pp. 399, 503, 626, 672.

While it does not relate to the mobile Army, it should be mentioned that during Mr. Taft's period as Secretary of War the concentration idea was put in operation in the Coast Artillery, many small posts being left in charge of caretakers.

In 1909, the Secretary of War (Mr. Dickinson) quoted in his annual report a memorandum of the General Staff as to the distribution of the Army, which invited attention to the extravagance and inefficiency caused by the past policy. This study was the first concrete exhibit of the subject, which Mr. Dickinson considered of vital importance. He asked that calculation be made determining the approximate amount that would be saved and the increased efficiency that might be expected from the proposed change in order that he might submit definite recommendation for action. These calculations were made and have been furnished the present head of the War Department. Three posts were abandoned during Mr. Dickinson's incumbency as Secretary of War.

The present Secretary of War is taking steps to provide for the economic administration of the forces in our insular possessions and in the Canal Zone. A special board of General Staff officers has been appointed to make definite recommendations as to the distribution of the mobile Army. As an example of its work it may be stated that the board, in determining the garrison for Oahu, pointed the way to a plan of post for six regiments on that island, which will cost half a million less than a post in the United States constructed, under the old system, for three regiments. Similar consideration is being given the garrisons for the Philippine Islands and the Canal Zone.

In short, it may be stated that there has been a definite and natural evolution in the policy of Army distribution. The initial distribution was determined by the requirements of Indian warfare, and for some time after this distribution ceased to be necessary the personnel of the Army was still influenced by old traditions and old ideals. The movement toward concentration began to make itself felt before the Spanish-American War, but was arrested by the necessity of providing for an increased Army before suitable new stations could be provided. The demand for concentration first found expression in the demand for the battalion post instead of the old company post, and then for the regimental post instead of the battalion station. The demand in each case was based upon sound tactional and economic principles and in each case was a step toward the ideal solution. Later and more scientific study of the problem has pointed out that a mobile Army should be trained as a team of all arms and that any dispersion which prevents such training is made at the expense of efficiency and economy. This evolution has taken place in the Army itself, and the Army can not blame any other institution or persons for gradual development which is characteristic of evolution.

(8) A full statement of the serious difficulties anticipated by the department in carrying out the policies of economy and efficiency in respect to the subject matter of this inquiry:

The most serious difficulties anticipated by the department in carrying out the proposed policies are the following:

First. The opposition of communities to the abandonment of Army posts located in their vicinity.

Second. The large original outlay probably necessary to establish the proposed system of locating garrisons at places that are strategically important.

Third. The difficulty of obtaining a fair value for the buildings and land pertaining to the abandoned posts.

As to the first difficulty, past exeprience shows that it is in general a difficult matter for the War Department to abandon posts situated in the vicinity of cities. Posts so situated are a source of revenue to the business men of the community through the articles purchased by officers and men and the supplies obtained by the Quartermaster's and Subsistence Departments for the upkeep of the post. The post itself serves as a recreation park for the citizens, where they can listen to a band concert and watch the various drills of the troops. For these reasons it is only natural that communities should resist vigorously the abandonment of posts situated in their vicinity and that their Representatives in the Congress should do all in their power to carry out the wishes of their constituents. Against such practical and plainly evident reasons for the maintenance of a post near his home town the average citizen is apt to attach little importance to projects based on purely military necessity and in which he is apt to take but very little interest.

The second serious difficulty arises from the strong opposition to be expected from the people to the relatively large original outlay that will be necessary to put into execution the proposed policy of locating garrisons for strategical reasons only. Although it can be shown that such a system will result in ultimate economy, to say nothing of increased efficiency, strong opposition may be expected to any project that will even temporarily increase the already large expenditures for the support of the Army. The principal item of this increased cost will be the expenditure necessary for the enlargement of the posts already located in places that are deemed of strategic importance, in order to accommodate the garrisons removed from the abandoned posts, and for the construction of new posts at strategic points at which no garrisons are at present maintained. The development of this policy would have to be a gradual one, and, as a rule, the outlay for any particular year would not be great.

As to the third difficulty, it may be said that the cost of putting into execution the proposed policy will be greatly reduced in the end by the proceeds resulting from the sale of the buildings and land pertaining to the abandoned posts and other military reservations. For the posts situated in the vicinity of cities, it may be anticipated that there will be no difficulty in selling the officers' quarters for suburban residences and in disposing of the land for building lots, but there are a number of buildings at every Army post, such as barracks, riding halls, gun sheds, post exchange, and administration buildings, that will be difficult to dispose of for prices that will bear any relation to their original cost. Sewer and lighting systems would probably find no purchasers unless the whole post were taken over by a corporation and operated after the manner of a suburban residence park. Values in some cases would also be affected by the class of undesirable citizens that have settled in the vicinity of large posts since the abolishment of the canteen.

It should be borne in mind, however, that the increased value of the land in many cases will tend to offset the loss in value of buildings and other improvements.

(9) The names and cost of Army posts which have been abandoned during the 10 years ending June 30, 1911:

	Total cost to date.
Fort Assiniboine, Mont	$915,178.30
Benicia Barracks, Cal	27,139.80
Fort Brown, Tex	246,787.32
Fort Duchesne, Utah	179,196.69
Eagle Pass, Tex	Unknown.
Fort Grant, Ariz	79,568.07
Fort Niobrara, Nebr	143,458.95
Fort Ringgold, Tex	98,724.70
San Diego Barracks, Cal	7,134.21
Fort Thomas, Ky	626,965.78
Fort Walla Walla, Wash	362,829.24
Fort Washakie, Wyo	44,206.32
Fort Wingate, N. Mex	327,672.03
	3,058,861.41

The names and cost of all Army posts which would have to be abandoned in order to put an end to the extravagance and inefficiency resulting from improper distribution of the mobile Army:

(*a*) The following posts should be abandoned as soon as suitable provision can be made elsewhere for their garrisons:

	Total cost to date.
Fort Apache, Ariz.[1]	$73,639.07
Boise Barracks, Idaho	398,049.73
Fort Brady, Mich	445,104.17
Fort Clark, Tex	138,748.23
Fort George Wright, Wash	694,854.32
Fort Jay, N. Y. (mobile garrison only)[2]	213,592.84
Fort Lincoln, N. Dak	618,459.27
Fort Logan H. Roots, Ark	428,136.67
Fort McIntosh, Tex	224,028.50
Fort Mackenzie, Wyo	1,218,966.00
Madison Barracks, N. Y	652,934.39
Fort Meade, S. Dak	1,225,787.93
Fort Niagara, N. Y	428,547.85
Fort Ontario, N. Y	337,637.50
Fort Wayne, Mich	542,354.62
Whipple Barracks, Ariz	602,015.69
Fort Wm. Henry Harrison, Mont	478,882.58
Fort Yellowstone, Wyo	806,511.51

(*b*) The following posts are not located with a view of securing economy of administration and supply or a full measure of military effectiveness. Their garrisons should not be increased and should ultimately be withdrawn to such concentration centers as Congress may authorize:

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[1] A possibility of Indian trouble near this post still exists.

[2] Not suitable for mobile troops, but should be retained as headquarters of the eastern division and as the site of the Eastern Military Prison.

	Total cost to date.
Fort Ethan Allen, Vt	$1,007,459.61
Plattsburg Barracks, N. Y	938,647.33
Fort Robinson, Nebr	1,071,122.28
Fort Missoula, Mont	593,941.00
Fort Logan, Colo	819,253.85
Fort Douglas, Utah	919,229.71
(Salt Lake City is a strategic point on account of the railway radiation, but this in itself is not sufficient reason for stationing a regiment at Fort Douglas. Such a regiment must forfeit opportunities of field training in combination with the other arms (Cavalry and Field Artillery), except at heavy expense for rail transportation.)	
Fort D. A. Russell, Wyo	4,925,486.15
(This post is not located with a view to maximum economy or strategic effectiveness. Its position in a sparsely settled region involves an increased cost for transportation of manufactured supplies, and its distance from recruiting centers makes the recruitment of its garrison more costly. But there are sufficient quarters at the post for a detachment of all arms, with ample facilities for training. There is an abundant water supply at the post, and climate and sanitary conditions are excellent. There is a large maneuver ground within easy marching distance of the post.)	

The fact that a post is located upon a possible line of operations is sometimes offered as an index of strategic location. For example, Plattsburg Barracks may be said to be strategically located because it is on a natural line of advance from Canada. But this is itself is no justification for placing a peace garrison at Plattsburg. If the troops of this and other similar garrisons were assembled in a large command at some central point, as Albany, they would be better instructed, because they would have teamwork with other arms, their administration and supply would be just as available for use at Plattsburg in the event of war as they are now, and much more available for employment at all other places. The attempt to permanently scatter troops so as to cover all possible lines of advance results in dispersion which is as fatal to economy as it is to tactical and strategical effectiveness.

(10) The estimated annual saving in money which would follow an efficient and economical distribution of the mobile Army, assuming said Army to remain at its present size, and the estimated increase in number of officers and men which could efficiently be made in the mobile Army were it properly distributed within the present annual cost of maintaining the Army:

The following estimate of saving is made on the assumption that the entire mobile Army serving within the United States proper is concentrated in 8 large posts of approximately equal size and located at centers of transportation and supply, instead of in 49 posts of various sizes not generally so located. It is not claimed that it is accurate or based on anything except the opinions of officers who have given the matter their best thought. Following the table under each appropriation are notes which will serve to indicate the method pursued in determining the percentage of saving to be assumed.

Quartermaster's Department.

REGULAR SUPPLIES.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Care and protection of supplies	$86,000.00	60	$51,600.00
Stoves, offices, barracks, etc	5,000.00	60	3,000.00
Heating apparatus	95,260.00	30	28,578.00
Repairs and maintenance, heating apparatus	51,500.00	30	15,450.00
Heating, barracks and quarters	1,134,000.00	50	556,800.00
Lighting	619,000.00	50	309,500.00
Ice machines, maintenance	6,000.00	80	4,800.00
Cold storage	5,700.00	80	4,560.00
Stationery	55,000.00	60	33,000.00
Typewriters	10,000.00	60	6,000.00
Printing (orders, etc.)	28,000.00	60	16,800.00
Total			1,030,088.00

The heating and lighting are the two greatest savings estimated. It is believed the estimate of 50 per cent of saving is conservative for the following reasons:

1. The number of administration buildings, guardhouses, fire stations, and similar buildings would be reduced 83 per cent.
2. Buildings would be more compactly arranged.
3. A few central heating plants would be used instead of separately heated buildings.
4. Fuel would be cheaper purchased in large quantities and at great centers of supply.

The same holds for lighting, with the additional fact that the exterior lighting of our present large reservations would be discontinued.

The greatest percentage of saving assumed (80 per cent) is on maintenance of ice machines and on cold storage. These items would be little more for a large post than for a small one. The other items may be similarly considered, remembering that there would be only one-sixth of the number of posts and administrative offices, and that many matters now subjects of correspondence would be attended to by memorandum or personal instruction.

INCIDENTAL EXPENSES.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Postage	$2,600.00	50	$1,300.00
Telegrams and telephones	67,000.00	60	40,200.00
Extra duty:			
Barracks and quarters	4,000.00	80	3,200.00
Roads	56,000.00	80	44,000.00
Clerks	12,000.00	80	7,200.00
Overseers	10,000.00	80	8,000.00
Office furniture	17,000.00	50	8,500.00
Laborers	69,000.00	70	48,300.00
Clerks, Quartermaster's Department	588,000.00	50	294,000.00
Other employees	258,000.00	50	129,000.00
Blacksmith tools	13,000.00	50	6,500.00
Additional expenses	65,000.00	50	32,500.00
Total			622,700.00

The greatest item is for clerks and other employees, Quartermaster's Department. For clerks approximately $300,000 saving is estimated.

The consolidation of the chief quartermaster's offices of six departments into three divisions resulted in the past year in a saving of $20,000 on clerks, and a saving of $30,000 is estimated this year.

It would seem reasonable to assume the consolidation of 49 post supply offices into 8, with the accompanying reduction of work at Army and division headquarters, would result in a reduction of 50 per cent in the clerical force. There would be only 16 per cent of the offices to correspond with, 16 per cent of the estimates, requisitions, returns, and similar papers.

The 80 per cent saving estimated on extra-duty men is believed conservative. In fact, it is believed that this item would almost disappear in a concentrated post constructed on simple lines.

BARRACKS AND QUARTERS.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Repairs	$572,000.00	50	$286,000.00
Extra duty	7,000.00	50	3,500.00
Civilian employees	73,000.00	50	36,500.00
Window shades	3,000.00	33	1,000.00
Total			327,000.00

Initial construction was not considered. The posts now in the United States have cost approximately $95,000,000. It has been determined by the board which drew up the plan for a concentrated post on Oahu that under the concentration system the construction would cost approximately one-half this amount.

ARMY TRANSPORTATION.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Changing station:			
1. Transportation	$1,185,000.00	60	$711,000.00
2. Impedimenta	155,000.00	60	103,000.00
3. Animals	70,000.00	60	42,000.00
4. Horses of officers	14,000.00	60	8,400.00
5. Officers, enlisted men, and civilians, including baggage	138,000.00	60	82,800.00
6. Packing and crating	49,000.00	60	29,400.00
7. Supplies	86,000.00	60	51,600.00
Recruits	375,000.00	30	112,500.00
Agents of the various departments	62,000.00	70	43,400.00
Quartermaster stores other than clothing	529,000.00	90	476,100.00
Subsistence stores	346,000.00	90	311,400.00
Horse equipments	3,000.00	90	2,700.00
Ordnance	190,000.00	25	48,000.00
Animals	214,000.00	25	50,350.00
Funds	8,000.00	25	2,000.00
Repairs to harness (purchase of tools, etc.)	16,000.00	50	8,000.00
Repairs to wagons, etc	75,000.00	50	37,500.00
Carts	5,400.00	80	4,320.00
Employees	967,000.00	20	193,400.00
Drayage	45,000.00	50	22,500.00
Total			2,240,370.00

The greatest saving is that on changing of stations which are estimated as 60 per cent. With the permanent foreign garrisons and the concentration of the Army, it is believed that changes of station will be rare and that this estimate is very conservative. The greatest percentage assumed is 90 per cent on transportation of supplies. If the concentration stations are well selected the reduction will be all of this and probably greater, since the posts themselves will make the market if it does not already exist in sufficient development. The saving on ordnance stores is taken as only 25 per cent, as these can not be purchased locally; this estimate is based on reduced freight expenses—the delivery to 8 large railroad centers instead of to 49 scattered and, in cases, isolated posts. No savings on the purchase of wagons, and only 20 per cent on employees was estimated, as it is presumed that the Field Service Regulations allowance of transportation and teamsters would be maintained.

WATER AND SEWERS.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Procuring water[1]	$414,000.00	50	$207,000.00
Introducing to posts	13,000.00	60	7,800.00
Fire apparatus	30,000.00	60	18,000.00
Repairs to above	12,000.00	60	7,200.00
Disposal of sewage	50,000.00	30	15,000.00
Repair of water systems	63,000.00	50	31,500.00
Repair of plumbing	93,000.00	20	18,600.00
Repair of sewers	48,000.00	50	24,000.00
Employees	212,000.00	50	106,000.00
Total			435,100.00

The greatest saving is on procuring water. Since a water system for a large post would not be proportionally greater in cost of operation than one for a small post, and the concentrated garrison system would do away with the extensive lawns, gardens, and roads to be watered, the estimated saving is thought conservative. The introduction of water to 8 large posts would certainly cost not more than 40 per cent as much as its introduction to 49 small posts. Only 20 per cent reduction was estimated on repairs to plumbing, as it was thought the 8 large posts would have approximately 80 per cent the fixtures now in the 49 small posts.

CONSTRUCTION AND REPAIR OF HOSPITALS.

Item.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Repairs	$160,000.00	50	$80,000.00

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[1] This includes pay of laborers, sinking of wells, sterilization, construction and enlargement of pumping plants, purchase of fuel for such plants, and payment for water obtained from other than military plants.

Repairs to 8 large hospitals would hardly be greater than half those to 49 smaller hospitals.

SHOOTING GALLERIES AND RANGES.

Item.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Shelter	$48,000.00	50	$24,000.00

Change from 49 small to 8 large posts.

MILITARY POST EXCHANGES.

Item.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Equipment and maintenance	$22,000.00	50	$11,000.00

Change from 49 small to 8 large posts.

ROADS, WALKS, WHARVES, AND DRAINAGE.

Items.	Chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Road construction	$144,350.00	80	$115,480.00
Road repair	50,000.00	80	40,000.00
Walk construction	15,000.00	80	12,000.00
Walk repair	20,000.00	80	16,000.00
Enlisted men at work on roads	3,000.00	80	2,400.00
Other employees on roads, wharves, and drainage	20,000.00	50	10,000.00
Drainage	12,000.00	80	9,600.00
Improvement of grounds	62,000.00	80	49,600.00
Total			265,080.00

Roads and walks would practically disappear with the parklike reservations. "Improvements to grounds" would be similarly reduced in importance.

RECAPITULATION FOR QUARTERMASTER'S DEPARTMENT.

Appropriation.	Estimated savings.
Regular supplies	$1,030,088.00
Incidental expenses	622,700.00
Barracks and quarters	327,000.00
Army transportation	2,240,370.00
Water and sewers	435,100.00
Hospitals	80,000.00
Shooting galleries and ranges	24,000.00
Military post exchanges	11,000.00
Roads, walks, wharves, and drainage	265,080.00
Total for Quartermaster's Department	5,035,338.00

Subsistence Department.

Items.	Estimated chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Ration articles	$3,711,028.00	4	$148,441.00
Hot coffee for troops traveling	5,000.00	50	2,500.00
Bake ovens and apparatus	10,700.00	60	6,420.00
Subsistence property (other than cooking apparatus and field ranges)	38,000.00	40	15,200.00
Compensation to civilian employees other than transport service.	110,000.00	20	22,000.00
Extra duty	30,000.00	80	24,000.00
Wastage in issue and transportation	15,000.00	10	1,500.00
Total			220,061.00

The greatest saving is on ration articles. This saving, estimated as 4 per cent, is based on competition that would result from the local purchase of supplies in such large quantities. The highest percentage is on extra-duty pay, resulting from the change from 49 posts to 8. The great saving in transportation has been considered under the Quartermaster's Department.

Medical Department.

Items.	Estimated chargeable to mobile Army in United States.	Estimated percentage.	Saving.
Medical and hospital supplies	$200,000.00	40	$80,000.00
Hospital matrons	3,000.00	60	1,800.00
Hospital nurses	20,000.00	60	12,000.00
Total			93,800.00

There are many expensive appliances which are necessary at all hospitals, regardless of size. There are many hospitals which are but rarely used. In some cases the large hospital requires no more than the small, and the purchase of such articles could be reduced about 80 per cent; the estimate of 40 per cent on supplies in general is therefore thought conservative.

Pay Department.

Items.	Savings estimated.
Mileage:	
Inspection by—	
1. Department and division commanders	$1,000.00
2. Inspector General's Department	2,300.00
3. Quartermaster's Department	5,800.00
4. Subsistence Department	500.00
5. Medical Department	800.00
6. Ordnance Department	2,400.00
Returning from conducting recruits	4,000.00
Examination for promotion	9,000.00
Changes of station	66,000.00
Courts-martial	6,000.00
Horsemanship tests	2,000.00
Payment of troops	18,000.00
Travel for dental and medical treatment	6,000.00
Total mileage	124,300.00

Pay Department—Continued.

Items.	Savings estimated.
Officers returned to duty with the line (6)	$21,600.00
Clerks (6)	9,000.00
Messengers (7)	4,200.00
	34,800.00
Total for Pay Department	159,100.00

ORDNANCE DEPARTMENT AND SIGNAL CORPS.

While there might be some saving on clerical assistance, it is believed that it would be too small to warrant consideration. The saving on mileage has been included under the Pay Department.

CORPS OF ENGINEERS.

It is not believed that any saving would result in this corps on account of the concentration.

ADJUTANT GENERAL'S DEPARTMENT.

The work of this department would be simplified by such a reduction in administrative units and the clerical force could be reduced so as to to effect a large saving.

RECAPITULATION.

The estimates herein made were based upon the assumption of a concentration in eight strategic areas, using such data as were immediately available. They are believed to be conservative.

Quartermaster's Department	$5,036,138
Subsistence Department	220,000
Medical Department	91,800
Pay Department	159,100
Total estimate	5,507,038

In reference to the last clause of subdivision 10 of your resolution, I beg to say that this saving would, if devoted to military purposes, enable 10 regiments of Infantry, with an enlisted strength of 900 men each, to be added to the mobile Army. This allows $500 as an average annual cost for each enlisted man and nearly $900,000 per year for overhead charges, due to the increased administration expenses.

Or it would enable each company, troop, and battery of the mobile Army to be increased by 20 privates, allowing $500 per year per man. The usual estimate of $1,100 per rifle is erroneous, as it charges to the enlisted man the full cost of maintenance of the Army, while over 50 per cent of this cost is not affected by an increase or decrease in the enlisted force.

Or it would pay the cost of 100,000 reservists at an annual cost of $55 per man, a number sufficient to bring the entire mobile Army to war strength and to form the necessary depot battalion from which losses would be replaced, thus doing away with the necessity for filling the ranks of the highly trained organizations with raw recruits in an emergency requiring the highest state of efficiency in our first line of defense.

In addition to this actual increase in numbers, there would be an increase in effective officers and men by returning to duty those now on extra and special duty. This is estimated as 5 per cent of the strength. The reduction in men required for guard and fatigue duties would add an additional 5 per cent to the number available for daily training. In event of a sudden call the number of men available to take the field would be between 5 and 10 per cent greater than at present, as there would not be necessary the many detachments of caretakers. This would be more marked in the Medical Department than in the line, since each of the 49 post hospitals would have to be kept in operation for the care of the sick, who could not be abandoned, while under the concentrated system there would be but 8 hospitals to be continued.

The great items of pay and clothing are not affected at all by the redistributions, and the subsistence only slightly. The expenses of the Coast Artillery Corps are unchanged, and the foreign garrisons have not been considered.

With reference to the foreign garrisons, it might be stated that the plan for concentration is now being put into effect in the insular possessions and Panama. The necessity for increasing the garrison of Oahu and for establishing that in the Canal Zone would have caused a great increase in the transport service had the system of changing regiments and scattered garrisons been continued. With the changes already approved and those under consideration it is believed that the water transportation for all these garrisons will cost little if any more than the cost in the past for the Philippine garrison alone. While this will not decrease expenses, it will prevent an otherwise necessary increase.

In so far as it has been practicable the principle of concentration has been put in operation for the Coast Artillery, and the result has been increased economy, ease, and efficiency of administration.

HENRY L. STIMSON,
Secretary of War.

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62d Congress, 2d Session } HOUSE OF REPRESENTATIVES { Document No. 504

MESSAGE

OF THE PRESIDENT OF THE UNITED STATES

TRANSMITTING DATA OF

THE WORK OF THE INTERIOR DEPARTMENT

AND

OTHER MATTERS

WITH

ACCOMPANYING PAPERS

FEBRUARY 2, 1912

Committed to the Committee of the Whole House on the state of the Union
and ordered to be printed, with illustrations

WASHINGTON
1912

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MESSAGE.

To the Senate and House of Representatives:

There is no branch of the Federal jurisdiction which calls more imperatively for immediate legislation than that which concerns the public domain, and especially the part of that domain which is in Alaska. The report of the Secretary of the Interior, which is transmitted herewith, and the report to him of the governor of Alaska, set out the public need in this regard with great force and in satisfactory detail.

The progress under the reclamation act has made clear the defects of its limitations, which should be remedied. The rules governing the acquisition of homesteads, of land that is not arid or semiarid, are not well adapted to the perfecting of title to land made arable by Government reclamation work.

I concur with the Secretary of the Interior in his recommendation that, after entry is made upon land being reclaimed, actual occupation as a homestead of the same be not required until two years after entry, but that cultivation of the same shall be required, and that the present provision under which the land is to be paid for in 10 annual installments shall be so modified as to allow a patent to issue for the land at the end of five years' cultivation and three years' occupation, with a reservation of a Government lien for the amount of the unpaid purchase money. This leniency to the reclamation homesteader will relieve him from occupation at a time when the condition of the land makes it most burdensome and difficult, and at the end of five years will furnish him with a title upon which he can borrow money and continue the improvement of his holding.

I also concur in the recommendation of the Secretary of the Interior that all of our public domain should be classified and that each class should be disposed of or administered in the manner most appropriate to that particular class.

The chief change, however, which ought to be made, and which I have already recommended in previous messages and communications to Congress, is that by which Government coal land and phosphate and other mineral lands containing nonmetalliferous minerals shall be leased by the Government, with restrictions as to size and time, resembling those which now obtain throughout the country between the owners in fee and the lessees who work the mines, and in leases like those which have been most successful in Australia, New Zealand, and Nova Scotia. The showing made by investigations into the successful working of the leasing system leaves no doubt as to its wisdom and practical utility. Requirements as to the working of the mine during the term may be so framed as to prevent any holding of large mining properties merely for speculation, while the royalties may be made sufficiently low not unduly to increase the cost of the coal mined and at the same time sufficient to furnish a reasonable income for the use of the public in the community where the mining goes on. In Alaska there is no reason why a substantial income should not thus be raised for such public works as may be deemed necessary or useful.

There is no difference between the reasons which call for the application of the leasing system to the coal lands still retained by the Government in the United States proper and those which exist in Alaska.

There are now in Alaska only two well-known high-grade coal fields of large extent—the Bering River coal field and the Matanuska coal field. The Bering River coal field, while it has varying qualities of coal from the bituminous to the anthracite, is very much lessened in value and usefulness by the grinding effect to which in geological ages past the coal measures have been subjected, so that the coal does not lie or can not be mined in large lumps. It must be taken out in almost a powdered condition. The same difficulty does not appear to the same extent in the Matanuska coal fields. The Bering River coal fields are only 25 miles from the coast. They are within easy distance of an existing railroad built by the Morgan-Guggenheim interests, and may also be reached through Controller Bay by the construction of other and competing railroads.

Controller Bay is not a good harbor, but could probably be made practical with the expenditure of considerable money. The railroad of the Morgan-Guggenheim interests, running from Cordova, could be made a coal carrying road for the Bering River fields by the construction of a branch to those fields not exceeding 50 or 60 miles. It is practicable, and if the coal measures were to be opened up. doubtless the branch would be built. In the present condition of things there is no motive to build the road, because there is no title or opportunity to open and mine the coal.

The Matanuska coal fields are a longer distance from the coast. They are from 150 to 200 miles from the harbor of Seward, on Resurrection Bay. This is one of the finest harbors in the world, and a reservation has been made there for the use of the Navy of the United States. A road constructed from Seward to the Matanuska coal fields would form part of a system reaching from the coast into the heart of Alaska, and open the great interior valleys of the Yukon and the Tanana, which have agricultural as well as great mineral possibilities.

The Alaska Central road has been constructed some 71 miles of the distance from Seward north to the Matanuska coal fields, but the construction beyond this has been discouraged, first, by the fact that there has been no policy adopted of opening up the coal lands upon which investors could depend, and, second, because there seemed to be a lack of financial backing of those engaged in the enterprise. The Secretary of the Interior has ascertained that the bondholders, who are the real owners of the road, are willing to sell to the Government, and he recommends the purchase of the existing road, such reconstruction as may be necessary, its continuance to the Matanuska coal fields, and thence into the valleys of the Yukon and the Tanana. It would be a great trunk line, and would be an opening up of Alaska by Government capital.

I am not in favor of Government ownership where the same certainty and efficiency of service can be had by private enterprise, but I think the conditions presented in Alaska are of such a character as to warrant the Government, for the purpose of encouraging the development of that vast and remarkable territory, to build and own a trunk-line railroad, which it can lease on terms which may be varied and changed to meet the growing prosperity and development of the Territory.

There is nothing in the history of the United States which affords such just reason for criticism as the failure of the Federal Government to extend the benefit of its fostering care to the Territory of Alaska. There was a time, of course, when Alaska was regarded as so far removed into the Arctic Ocean as to make any development of it practically impossible, but for years the facts have been known to those who have been responsible for its government, and everyone who has given the subject the slightest consideration has been aware of the wonderful possibilities in its growth and development if only capital were invested there and a good government put over it. I think the United States owes it, therefore, to Alaska, and to the people who have gone there, to take an exceptional step and to build a railroad that shall open the treasures of Alaska to the Pacific and to the people who live along that ocean on our western coast. The construction of a railroad and ownership of the fee do not necessitate Government operation. Pursuant, however, to the recommendation of the Secretary of the Interior, I suggest to Congress the wisdom of providing that the President may appoint a commission of competent persons, including two Army engineers, to examine and report upon the available routes for a railroad from Seward to the Matanuska coal fields and into the Tanana and Yukon Valleys, with an estimate of the value of the existing partially constructed railroad and of the cost of continuing the railroad to the proper points in the valleys named. This proposal is further justified by the need that the Navy of the United States has for a secure coaling base in the North Pacific. The commission ought to make a full report also as to the character of the coal fields at Matanuska and the problem of furnishing coal from that source for mercantile purposes after reserving for Government mining a sufficient quantity for the Navy.

I have already recommended to Congress the establishment of a form of commission government for Alaska. The Territory is too extended, its needs are too varied, and its distance from Washington to remote to enable Congress to keep up with its necessities in the matter of legislation of a local character.

The governor of Alaska in his report, which accompanies that of the Secretary of the Interior, points out certain laws that ought to be adopted, and emphasizes what I have said as to the immediate need for a government of much wider powers than now exists there, if it can be said to have any government at all.

I do not stop to dwell upon the lack of provision for the health of the inhabitants and the absence or inadequacy of laws, the mere statement of which shows their crying need. I only press upon Congress the imperative necessity for taking action not only to permit the beginning of the development of Alaska and the opening of her resources, but to provide laws which shall give to those who come under their jurisdiction decent protection.

LOWER COLORADO RIVER.

There is transmitted herewith a letter from the Secretary of the Interior setting out the work done under joint resolution approved June 25, 1910, authorizing the expenditure of $1,000,000, or so much thereof as might be necessary, to be expended by the President for the purpose of protecting lands and property in the Imperial Valley and elsewhere along the Colorado River in Arizona. The money was expended and the protective works erected, but the disturbances in Mexico so delayed the work, and the floods in the Colorado River were so extensive that a part of the works have been carried away. and the need for further action and expenditure of money exists. I do not make a definite recommendation at present, for the reason that the plan to be adopted for the betterment of conditions near the mouth of the Colorado River proves to be so dependent on a free and full agreement between the Government of Mexico and the Government of the United States as to joint expenditure and joint use that it is unwise to move until we can obtain some agreement with that Government which will enable us to submit to Congress a larger plan, better adapted to the exigencies presented than the one adopted.

It is essential that we act promptly, and through the State Department the matter is being pressed upon the attention of the Mexican Government. Meantime, a report of the engineer in charge, together with a subsequent report upon his work by a body of experts appointed by the Secretary of the Interior, together with an offer by the Southern Pacific Railroad to do the work at a certain price, with a guaranty for a year, and a comment upon this offer by Brig. Gen. Marshall, late Chief of Engineers, United States Army, and now consulting engineer of the Reclamation Service, are all herewith transmitted.

WATER-POWER SITES.

In previous communications to Congress I have pointed out two methods by which the water-power sites on nonnavigable streams may be controlled as between the State and the National Government. It has seemed wise that the control should be concentrated in one government or the other as the active participant in supervising its use by private enterprise. In most cases where the Government owns what are called water-power sites along nonnavigable streams, which are really riparian lots, without which the power in the stream can not be used, we have a situation as to ownership that may be described as follows: The Federal Government has land without which the power in the stream can not be transmuted into electricity and applied at a distance, while it is claimed that the State, under the law of waters as it prevails in many of our Western States, controls the use of the water and gives the beneficial use to the first and continuous user. In order to secure proper care by the State governments over these sources of power, it has been proposed that the Government shall deed the water-power site to the State on condition that the site and all the plant upon it shall revert to the Government unless the State parts with the site only by a lease, the terms of which it enforces and which requires a revaluation of the rental every 10 years, the full term to last not more than 50 years. A failure of the State to make and enforce such leases would enable the Government by an action of forfeiture to recover the power sites and all plants that might be erected thereon, and this power of penalizing those who succeed to the control would furnish a motive to compel the observance of the policy of the Government.

The Secretary of the Interior has suggested another method by which the water-power site shall be leased directly by the Government to those who exercise a public franchise under provisions imposing a rental for the water power to create a fund to be expended by the General Government for the improvement of the stream and the benefit of the local community where the power site is, and permitting the State to regulate the rates at which the converted power is sold. The latter method suggested by the Secretary is a more direct method for Federal control, and in view of the probable union and systematic organization and welding together of the power derived from water within a radius of three or four hundred miles, I think it better that the powerof control should remain in the National Government than that it should be turned over to the States. Under such a system the Federal Government would have such direct supervision of the whole matter that any honest administration could easily prevent the abuses which a monopoly of absolute ownership in private persons or companies would make possible.

BUREAU OF NATIONAL PARKS.

I earnestly recommend the establishment of a Bureau of National Parks. Such legislation is essential to the proper management of those wondrous manifestations of nature, so startling and so beautiful that everyone recognizes the obligations of the Government to preserve them for the edification and recreation of the people. The Yellowstone Park, the Yosemite, the Grand Canyon of the Colorado, the Glacier National Park, and the Mount Rainier National Park and others furnish appropriate instances. In only one case have we made anything like adequate preparation for the use of a park by the public. That case is the Yellowstone National Park. Every consideration of patriotism and the love of nature and of beauty and of art requires us to expend money enough to bring all these natural wonders within easy reach of our people. The first step in that direction is the establishment of a responsible bureau which shall take upon itself the burden of supervising the parks and of making recommendations as to the best method of improving their accessibility and usefulness.

INTERNATIONAL COMMISSION ON THE COST OF LIVING.

There has been a strong movement among economists, business men, and others interested in economic investigation to secure the appointment of an international commission to look into the cause for the high prices of the necessities of life. There is no doubt but that a commission could be appointed of such unprejudiced and impartial persons, experts in investigation of economic facts, that a great deal of very valuable light could be shed upon the reasons for the high prices that have so distressed the people of the world, and information given upon which action might be taken to reduce the cost of living. The very satisfactory report of the Railway Stock and Bonds Commission indicates how useful an investigation of this kind can be when undertaken by men who have had adequate experience in economic inquiries and a levelheadedness and judgment correctly to apply sound principles to the facts found.

For some years past the high and steadily increasing cost of living has been a matter of such grave public concern that I deem it of great public interest that an international conference be proposed at this time for the purpose of preparing plans, to be submitted to the various Governments, for an international inquiry into the high cost of living, its extent, causes, effects, and possible remedies. I therefore recommend that, to enable the President to invite foreign Governments to such a conference, to be held at Washington or elsewhere, the Congress provide an appropriation, not to exceed $20,000, to defray the expenses of preparation and of participation by the United States.

The numerous investigations on the subject, official or other, already made in various countries (such as Austria, Belgium, Canada, Denmark, France, Germany, Great Britain, Italy, the Netherlands, and the United States) have themselves strongly demonstrated the need of further study of world-wide scope. Those who have conducted these investigations have found that the phenomenon of rising prices is almost if not quite general throughout the world; but they are baffled in the attempt to trace the causes by the impossibility of making any accurate international comparisons. This is because, in spite of the number of investigations already made, we are still without adequate data and because as yet no two countries estimate their price levels on the same basis or by the same methods.

As already indicated, the preliminary conference itself would entail a comparatively small expense, and most of the subsequent investigations for which it would prepare the way could be carried out by existing bureaus in this and other Governments as part of their regular work and would require little, if any, additional appropriations for such bureaus.

COMMISSION ON INDUSTRIAL RELATIONS.

The extraordinary growth of industry in the past two decades and its revolutionary changes have raised new and vital questions as to the relations between employers and wage earners which have become matters of pressing public concern. These questions have been somewhat obscured by the profound changes in the relations between competing producers and producers as a class and consumers—in other words, by the changes which, among other results, have given rise to what is commonly called the trust problem. The large-scale production characteristic of modern industry, however, involves the one set of relations no less than the other. Any interruption to the normal and peaceful relations between employer and wage earner involves public discomfort and in many cases public disaster. Such interruptions become, therefore, quite as much a matter of public concern as restraint of trade or monopoly.

Industrial relations concern the public for a double reason. We are directly interested in the maintenance of peaceful and stable industrial conditons for the sake of our own comfort and well-being; but society is equaly interested, in its sovereign civic capacity, in seeing that our institutions are effectively maintaining justice and fair dealing between any classes of citizens whose economic interests may seem to clash. Railway strikes on such a scale as has recently been witnessed in France and in England, a strike of coal-mine workers such as we have more than once witnessed in this country, and such a wholesale relinquishing of a public service as that of the street cleaners recently in New York, illustrate the serious danger to public well-being and the inadequacy of the existing social machinery either to prevent such occurrences or to adjust them on any equitable and permanent basis after they have arisen.

In spite of the frequency with which we are exposed to these dangers and in spite of the absence of provision for dealing with them, we continue to assume with easy-going confidence that in each new case, somehow or other, the parties to the dispute will find some solution which will be agreeable to themselves and consistent with the public interest. We all see the grave objections to strikes and lockouts, however necessary they may be in extreme cases; and we are ready to criticize the more extreme phases of the industrial conflict such as boycotts and blacklists; but we leave the situation such that industrial disputes lead inevitably to a state of industrial war in which these are the only weapons left to the two combatants. No more clumsy or expensive method of determining the rate of wages and the hours and conditions of labor could well be devised. The successful operation of the Erdman Act as between interstate railroads and their employees shows how much good can be done by proper legislation.

At the moment when the discomforts and dangers incident to industrial strife are actually felt by the public there is usually an outcry for the establishment of some tribunal for the immediate settlement of the particular dispute. But what is needed is some system, devised by patient and deliberate study in advance, that will meet these constantly occurring and clearly foreseeable emergencies—not a makeshift to tide over an existing crisis. Not during the rainstorm but in fair weather should the leaking roof be examined and repaired.

The magnitude and complexity of modern industrial disputes have put upon some of our statutes and our present mechanism for adjusting such differences—where we can be said to have any mechanism at all—a strain they were never intended to bear and for which they are unsuited. What is urgently needed to-day is a reexamination of our laws bearing upon the relations of employer and employee and a careful and discriminating scrutiny of the various plans which are being tried in several of our own States and in other countries. This would seem to be the first natural step in bringing about an adjustment of these relations better suited to the newer conditions of industry.

Numerous special investigations, official and unofficial, have revealed conditions in more than one industry which have immediately been recognized on all sides as entirely out of harmony with accepted American standards. It is probable that to a great extent the remedies for these conditions, so far as the remedies involve legislation, lie in the field of State action; but such a comprehensive inquiry as is necessary to furnish a basis for intelligent action must be undertaken on national initiative and must be nation-wide in its scope. In view of the results that have followed the activities of the Federal Government in education, in agriculture, and in other fields which do not lie primarily within the field of Federal legislation, there can be no serious argument against the propriety or the wisdom of an inquiry by the Federal Government into the general conditions of labor in the United States, notwithstanding the fact that some of the remedies will lie with the separate States, or even entirely outside the sphere of governmental activity, in the hands of private individuals and of voluntary agencies. One legitimate object of such an official investigation and report is to enlighten and inform public opinion, which of itself will often induce or compel the reform of unjust conditions or the abatement of unreasonable demands.

The special investigations that have been made of recent industrial conditions, whether private or official, have been fragmentary, incomplete, and at best only partially representative or typical. Their lessons, nevertheless, are important, and until something comprehensive and adequate is available they serve a useful purpose, and they will necessarily continue to be made. But unquestionably the time is now ripe for a searching inquiry into the subject of industrial relations which shall be official, authoritative, balanced, and well rounded, such as only the Federal Government can successfully undertake. The present widespread interest in the subject makes this an opportune time for an investigation, which in any event can not long be postponed. It should be nonpartisan, comprehensive, thorough, patient, and courageous.

There is already available much information on certain aspects of the subject in the reports of the Federal and State Bureaus of Labor and in other official and unofficial publications. One essential part of the proposed inquiry would naturally be to assemble, digest, and interpret this information so far as it bears upon our present industrial conditions. In addition to this the commission should inquire into the general conditions of labor in our principal industries, into the existing relations between employers and employees in those industries, into the various methods which have been tried for maintaining mutually satisfactory relations between employees and employers and for avoiding or adjusting trade disputes, and into the scope, methods, and resources of Federal and State Bureaus of Labor and the methods by which they might more adequately meet the responsibilities which, through the work of the commission above recommended, would be more clearly brought to light and defined.

MISBRANDING IMPORTED GOODS.

My attention has been called to the injustice which is done in this country by the sale of articles in the trade purporting to be made in Ireland, when they are not so made, and it is suggested that the justice of the enactment of a law which, so far as the jurisdiction of the Federal Government can go, would prevent a continuance of this misrepresentation to the public and fraud upon those who are entitled to use the statement in the sale of their goods. I think it to be greatly in the interest of fair dealing, which ought always to be encouraged by law, for Congress to enact a law making it a misdemeanor, punishable by fine or imprisonment, to use the mails or to put into interstate commerce any articles of merchandise which bear upon their face a statement that they have been manufactured in some particular country when the fact is otherwise.

BUILDING FOR PUBLIC ARCHIVES.

I can not close this message without inviting the attention of Congress again to the necessity for the erection of a building to contain the public archives. The unsatisfactory distribution of records, the lack of any proper index or guide to their contents, is well known to those familiar with the needs of the Government in this Capital. The land has been purchased and nothing remains now but the erection of a proper building. I transmit a letter written by Prof. J. Franklin Jameson, director of the department of historical research of the Carnegie Institution of Washington, in which he speaks upon this subject as a member of a committee appointed by the executive council of the American Historical Association to bring the matter to the attention of the President and Congress.

Wm. H. Taft.

The White House, *February 2, 1912.*

REPORT OF THE SECRETARY OF THE INTERIOR FOR THE FISCAL YEAR ENDED JUNE 30, 1911

REPORT OF THE SECRETARY OF THE INTERIOR.

WASHINGTON, D. C., *December 1, 1911.*

SIR: I have the honor to submit, for your consideration, my first annual report as Secretary of the Interior, covering the year ended June 30, 1911. I was appointed to this office by you on March 7, 1911, and qualified on March 13, 1911, succeeding the Honorable Richard A. Ballinger. Less than one-third, therefore, of the year included in this report has been covered by my administration.

GENERAL STATEMENT.

My predecessors have called attention to the mass and variety of important matters which are intrusted to the charge of the Department of the Interior, and which relate to—

The General Land Office,
The Office of Indian Affairs,
The Pension Office,
The Patent Office,
The Geological Survey,
The Bureau of Education,
The Bureau of Mines,
The Reclamation Service,
The Territories (exclusive of the insular possessions; but including Hawaii),
The national parks and monuments,
American antiquities,
Superintendent of Capitol Building and Grounds,
Government Hospital for the Insane,
Freedmen's Hospital,
Howard University,
Columbia Institution for the Deaf and Dumb.

The Secretary of the Interior is also charged with certain duties in connection with the District of Columbia, including the protection of the public streets, avenues, squares, and reservations in the city of Washington from improper appropriation or occupation; the issuance of deeds to certain lots in that city, and special duties imposed by particular acts of Congress.

My predecessor, Secretary Ballinger, called attention in his annual report for the year 1910 to the thoroughly inconsistent manner in which the work of the Government has been divided between the administrative departments of the Interior, of Agriculture, and of Commerce and Labor, with the inevitable result of duplication of governmental effort and the administrative ineffectiveness arising out of divided jurisdiction. A very substantial increase of efficiency and economy would undoubtedly result from a rearrangement of these executive departments so that work of a related character could be administered by one department, and so that the mass of work itself could be more evenly distributed among the departments. The grouping of related subjects in a single department would undoubtedly materially reduce the work of some, without greatly increasing that of others. The present situation is the quite natural outgrowth of the manner in which the Department of the Interior was first created and the inconsistent duties which were then imposed upon it. The principal bureaus which were at first placed under it were the General Land Office, the Office of Indian Affairs, the Patent Office, and the Pension Office, but as new matters were undertaken by the General Government which did not logically fall under any of the other departments they were naturally assigned to the Department of the Interior, which became a sort of administrative "catchall" and has so continued, although partially relieved by the establishment of the Department of Agriculture and the Department of Commerce and Labor.

It is difficult to understand why the Patent Office should not have been transferred to the latter department upon its creation, although the Patent Office is now so thoroughly organized and systematized and its work so definitely covered by statutory and administrative regulations that the matters which come up from it to the Secretary of the Interior do not add materially to his work. I am of the opinion, however, that if this bureau should be transferred to the Department of Commerce and Labor a relationship could be established between it and the head of that department which would increase its efficiency and usefulness. The local duties of the Secretary of the Interior relating to various matters in the District of Columbia should unquestionably be turned over to the Commissioners of the District. I do not feel, however, that my brief period of office qualifies me to recommend a comprehensive reorganization of the Department of the Interior. What I have said above is chiefly intended as preliminary to the statement that the real function of the Department of the Interior has been, broadly speaking, the administration and disposition of the lands and natural resources held directly or in trust by the Nation. I believe that the Department will more effectively and economically carry on this tremendously important function if it is given all of the distinctively administrative duties relating to it.

PUBLIC LAND LAWS.

The general theory under which the Government has proceeded and is now proceeding is that the public domain should be utilized for actual settlement and development rather than as a source of revenue for the General Government. In my judgment this theory is entirely correct. The essential thing is to see that the theory is, in fact, carried into effect and that under the guise of settlement we do not permit mere exploitation which in the last analysis retards and prevents both settlement and development. While settlement and development afford and should afford ample opportunity for the profit of the individual settler and of all those who contribute to legitimate development, it is the conviction that exploitation under the guise of development has not been effectively prevented which has led to the great public movement for the conservation of our national resources. This movement is not in any way opposed to prompt and wise development of the public domain, nor to its immediate settlement by those who really intend in good faith to occupy and improve it and not merely to acquire it so that it may be turned over to the actual settler after an unnecessary profit has been paid to the middleman and the promoter.

There is undoubtedly a legitimate field for the resident or non-resident promoter of enterprises upon which the effective settlement of certain portions of the public domain practically depends. There is a legitimate field for the expenditure of capital in the development of the land and its contents. Indeed, the bona fide settler is dependent in many instances upon the services of the promoter and the money of the capitalist. In so far as this need is properly supplied the promoter and capitalist should be protected, but there is no disguising the fact that both promoter and capitalist frequently seek and secure advantages to which they are not justly entitled. Often their efforts not only do not tend to develop, but actually retard and prevent development. Large areas of the public land, great quantities of timber and of mineral deposits, extensive water powers, are eagerly sought after, not for the purpose of immediate utilization and development, but so that they may be held to await the aftergrowth of the country, to be then transferred to those who will actually utilize them after an unearned increment has been paid to those who acquired the property from the Government under insufficient laws or lax administration.

It is this sort of exploitation which should be frankly and absolutely prevented and which, if prevented, would enable us to remove many of the restrictive provisions which now irritate and hamper the bona fide settler and industrial pioneer. The man on the ground should be the object of our solicitude, and we should protect him against those who would place upon his shoulders any unnecessary burden. I believe that to this end we can profitably modify certain of the existing laws relating to the public domain. Take, for instance, our agricultural lands. The object of the law with respect to these is to ensure actual settlement. This can be accomplished only by rigid insistence upon the requirement of actual residence upon the ground with only such exceptions as are required or justified by agricultural conditions which make town residence in close proximity to the tract cultivated appropriate. The system should be flexible enough to recognize the actual differences which in fact exist with respect to the different kinds of land and the different methods of cultivation. Land adapted to dry farming, land adapted to ordinary cultivation without irrigation, and land requiring irrigation each presents differences in method of cultivation and should admit of appropriate differences in the rules with regard to residence. The law should insist upon the cultivation of agricultural lands by the entryman, but should permit the application to such lands of rules and methods of treatment suited to their differing characteristics under the general administrative supervision of the Secretary of the Interior. In other words, the laws and the administrative regulations should be made to fit actual conditions as they exist, and they should be just as stringent in the prevention of nonresident exploitation as they are liberal in the encouragement of the bona fide settler.

Although substantially true of all homestead entries, this is especially true of irrigated lands under the Reclamation Service. The present law requires the man who desires to acquire a home on a Government reclamation project to reside upon the particular tract he enters for five years under the homestead law and to reclaim at least one-half of the irrigable area as well as to pay the full reclamation charge, which must be divided into not more than 10 annual installments. This law has been a perfectly natural outgrowth of the previous laws relating to the public domain, and it has worked marvelously well in spite of its disadvantages. It is now clear, however, that it contains certain serious disadvantages for which there is no longer any adequate excuse. What we desire is actual settlement. We should have no desire to impose any unnecessary hardships upon the actual settler. What has happened is that the law has failed to take into account the conditions under which the actual settler is required to work.

Irrigated lands, as a rule, are in their natural state but parts of the desert. They are usually covered with the growths which the desert produces. These must be cleared and the land graded and otherwise prepared for the application of water before any crops whatever can be raised. In many instances each tract must also be fenced, and where it is adapted for actual residence on the ground itself the home must be constructed, together with the necessary outbuildings and shelters for the agricultural implements and machinery essential to cultivation. All of this requires a considerable expenditure which is usually a heavy drain upon the resources of the settler. The land itself can seldom be made to produce any immediate revenue. If it is fruit land, the trees must be planted and reach a certain growth before they will bear fruit. Subsidiary crops can often be raised, but frequently not with profit until after one or two years' preliminary cultivation. It is often essential to plant the land in alfalfa or other leguminous crops before it is suitable for the raising of grain, sugar beets, or other crops for which it is ultimately intended. All of this means that where the settler has not accumulated a considerable capital and is without other means of livelihood, the requirement of actual residence upon the land during the first two years after entry is a serious hardship and a real obstacle to settlement. Many men who would make admirable settlers and citizens of the Western States are prevented from acquiring the homes and the substantial livelihood which would otherwise be opened to them. I see no reason whatever for insisting upon the requirement of actual residence at the outset in such cases.

On the other hand, it would be subversive of the public interest if the residential requirement were reduced without strict insistence upon actual and progressive cultivation and improvement of the ground. The law should fasten its attention upon the real situation. It should absolutely insist upon cultivation and it should permit the relaxation of the rule requiring residence during the first two years. Actual residence, however, should be rigidly required for a sufficient period to make certain that the entryman was a real settler with the intention of making his home upon the land. I believe a residential requirement of three years following the first two after entry would protect the public interest, ensure the carrying out of the essential purpose of the law, and at the same time facilitate and encourage settlement and development. It would permit many men who sincerely desire to acquire homes for themselves to enter tracts of land, put them under cultivation, and build homes without depriving themselves of the means of livelihood during the period when the ground would not support their families. Clerks, mechanics, and small farmers, as well as many others, would be enabled to invest their accumulated savings in their future homes and to continue in their present employment while they were preparing these homes for future occupation. The requirement of progressive cultivation and three years' residence would be an effective obstacle to the mere exploitation of the public domain.

The repayment of the reclamation charges also requires some modification of the existing law. The theory of the law is entirely correct. It is that the Government has set aside the available revenue from the sale of public lands and has added to it certain other funds, all of which are, in effect, loaned to the future settlers on the public domain. The Reclamation Service is constituted a trustee for the Government and for the settlers. It invests the public moneys in the construction of irrigation works and administers these works while the land is being settled and until the investment has been returned to the Government, to be invested in the irrigation of other lands and the development of other sections of the country. It is a useful agent of public benefaction, and nothing should be done to interfere with its beneficent operation. At the same time the settler should be enabled to carry the financial load with as little effort as possible. The law requires that it shall be repaid in annual installments not exceeding ten in number, and in view of recent legislation permitting the readjustment of these charges under appropriate conditions when circumstances require it, I believe the division into ten installments is wise, provided the settler is enabled to acquire patent earlier. However, these installments should not be, and fortunately the law does not require them to be, equal in amount. This permits the recognition of the actual conditions to which I have already referred and which call for an unequal division of the water charges so that the installments required during the early years of settlement shall not be so large as those of later years when the ground has been made more productive and better able to carry the load. The policy of readjusting these charges in the manner described is now being put into practical effect in the Reclamation Service wherever occasion requires.

There is, however, urgent need for the modification of the existing law so as to permit the settler to acquire the title of the property, subject to the lien of the Government for the unpaid installments of the water charge, at any time after the settler has complied with the residence and cultivation provisions already recommended and has paid a proper portion of the water charge. In other words, at any time after five years from the date of entry and within the life thereof, when the settler has actually lived upon the land continuously for three years and has put it under continuous and progressive cultivation and has paid a definite and substantial portion of the total water charge, he should be given the title to his property, subject to an effective lien for the payment of whatever part of the water charge remains unpaid. This will enable him to do what he is not now able to do—mortgage his property for the purpose of raising funds with which to continue its development, or to meet any unexpected obstacle to its profitable cultivation, or any unanticipated drain upon his financial resources.

In my judgment, the failure of the law to fit the facts in the respects already noted is largely responsible for a feeling sometimes existing on the part of the settlers on the Government irrigation projects that the human side of the problem has not been sufficiently appreciated by the Reclamation Service. Moreover, present methods of administration fail to differentiate properly between the engineering and administrative phases of the reclamation work. The Reclamation Service is naturally and necessarily concerned chiefly with engineering, planning, and construction, and I can not speak too highly of the character and qualifications of the general force which has this important work in charge. Its success has been demonstrated in many ways. It has worked out new and untried problems under adverse conditions. The most convincing proof of its success is the widespread and growing demand for new Government projects all over the West. Everywhere the demand is that the Government shall undertake new projects or make extensive additions to old ones. In many places the promoters and settlers upon private irrigation projects are eager to have the Government take them over. The general prosperity of the projects already undertaken is apparent. Only 338 homesteads open to entry now remain unentered on the 29 projects thus far undertaken. With the amendments to the law which I have suggested, I believe that all of these projects will become prosperous and their settlers generally happy and contented. Those will fail who do not possess the essentials necessary for success, but such failures can never be prevented.

We should aid tho unfortunate in every proper way, but merely sentimental laxity with the shiftless and incompetent can only work disaster to the public at large and to the individual settlers whose industry and ability entitle them to the substantial reward which awaits those who really reclaim the desert. What is needed is wise administrative ability in those who are put in charge of the reclamation projects after they are opened for entry. The Reclamation Service has long recognized this and has endeavored to fill the positions of irrigation manager in the various projects by the appointment of men of administrative rather than distinctly engineering ability. Nevertheless, after the project is opened for entry it is necessary for a considerable period of time to have the irrigation works operated by engineers so that latent defects may be discovered and remedied and the works fitted to the conditions of actual operation. One of the most serious phases of our entire reclamation work is the disposition of the surplus waters which now frequently damage or even ruin portions of the irrigated district through seepage. The problem thus presented is one calling for the very highest engineering skill, and I have directed the Reclamation Service to devote its principal energies to remedying the unfortunate conditions thus created. I mention it here chiefly to illustrate the necessity for continued engineering supervision of an irrigation district even after it is opened for entry. At the same time I am convinced that the creation of a separate administrative division within the Reclamation Service to take charge of the administrative features as distinguished from the engineering work will promote better relations between the

Government and the settlers than have heretofore existed and will add in many ways to the efficiency of the Reclamation Service.

One thing which should be immediately done, however, is to turn over to the Reclamation Service the collection of the payments due the Government for the water charges so that they may be handled immediately upon the projects themselves and the funds be transferred to their proper depositories. The present law requires these charges to be collected by the local land offices, which are often not sufficiently near or in touch with the reclamation projects to make effective cooperation possible. The result is delay and duplication of work and frequent misunderstandings between the project superintendent and the nearest land officials. It is a division of work and of responsibility for which there is no adequate justification, and, as both the Commissioner of the General Land Office and the Director of the Reclamation Service recommend that these collections be transferred as above suggested, I earnestly urge appropriate action by Congress.

The considerations above mentioned with respect to residence and cultivation of land entries under irrigation projects would apply with little less force to homestead entries in general, provided all of our public lands were classified and then administered or disposed of in accordance with their real character under the classification. Too much emphasis has heretofore been put upon the maintenance of nominal residence for the full five years and too little upon the continuous and progressive cultivation of the land. No land should be opened to homestead entry except that which is really suitable for homes and then the homemaker should be aided in every proper way. Agricultural land should not be classified as timber land simply because it has on it some trees of secondary importance; but one of the abuses of the homestead law has been the entry under it of land chiefly valuable for its timber. The purpose has not been agricultural settlement but timber exploitation. This should no longer be permitted. Where timber land will be valuable for agricultural uses after the timber is cut, the Government should dispose of the timber as timber and should open the land to homestead entry only after the timber has been removed. Where timber land will not be adapted for future agricultural uses, but can be reforested, it should be retained by the Government for this purpose. The fact that purchases must now be made in the Appalachian Mountains by the National Forest Reservation Commission shows how unwise it is for the Government to dispose of such lands to private individuals.

Public lands can now be withdrawn from entry for purposes of classification, but after they are classified they can not be appropriately administered in accordance with the classification. If the statutes can be altered to secure proper administration under the classification principle, it would seem entirely safe and on the whole wise to relieve the homesteader of the requirement that he should live upon his homestead during the first two years after entry, provided during that period he shall cultivate a substantial and fixed proportion of his land and during the three following years shall increase this cultivation and maintain his actual residence upon the land. This system would aid the genuine homesteader and diminish the present abuses of the homestead law. It is sometimes urged that the homesteader should be permitted to secure his title after three years from the date of entry without other change in the present homestead law. This, however, would not properly meet the real situation as it would neither relieve the entryman of the obligation to reside on his land during the first two years after entry, nor would it ensure the actual progressive cultivation of a definite and substantial proportion of the ground. The commutation laws should be repealed. They have been largely utilized in obtaining valuable timber land under the guise of homestead entry.

Some practical and legal method should be found for definitely limiting the time within which such scrip as military bounties, soldiers' additional homesteads, etc., may be located and lands acquired thereunder. Few, if any, of the intended beneficiaries of this scrip now hold it or have received adequate consideration from those to whom they have sold. It adds greatly to the difficulties of administration and should be retired as soon as possible.

The timber and stone act should be immediately repealed, and also the act authorizing the cutting of timber on mineral lands. Those acts hold out a constant invitation to abuse and to mere exploitation of the kind I have described. The excuse for their continuance would be removed if the Secretary of the Interior were empowered to sell timber from the public lands outside of the national forests separate from the land on which the timber stands, and also to permit near-by settlers, prospectors, and miners to have use of small quantities of timber, either for a nominal charge or without any charge whatever under appropriate restrictions. It is the insistence upon keeping on the statute books such laws as the timber and stone act and those authorizing the cutting of timber on mineral lands which necessitates the adoption of restrictive legislation or administrative regulations that hamper real settlement and development. If we can frankly adopt and put into force laws which will absolutely prevent mere exploitation, we can far more safely enact liberal laws and regulations to encourage legitimate development.

The public range can not be properly administered under the existing law. It should be leased for grazing purposes under the broad administrative discretion of the Secretary of the Interior, so that the leases can be adapted to actual conditions and the legitimate interests of the sheep and cattle men. At present the range itself is being destroyed, and both sheep and cattle men are coming more and more to the conviction that their own interests will be better subserved by a leasing law. In fact, the enlarged application of the leasing principle to the public domain generally will, in my judgment, more effectively promote development and protect the public interest than the present system. Certainly coal, oil, gas, asphalt, nitrate, and phosphate lands can be more appropriately developed by leasehold than by the present system of classification and sale of the fee which prevails with respect to coal. Many of the Western States have recognized and are acting upon this principle. These applications of the leasing system are stated more in detail in connection with affairs in Alaska, but principles which are economically sound in Alaska should be economically sound elsewhere, due allowance being made for the different stages of development.

Our mining laws should be thoroughly revised, and particularly the use of the power of attorney should be abolished or greatly curtailed and safeguarded. At present there is no limitation whatever upon the number of claims which can be entered by a single man as attorney for others. I find among those who are personally and financially interested in mining development an increasing conviction that this should no longer be permitted. The advocacy of a definite limitation to the number of claims which can be entered by any one person as attorney for others is almost universal, and many believe that the entire power of attorney principle should be eliminated from the law. The surveying regulations relating to mining claims should be greatly simplified and should then be strictly enforced. I renew the recommendation made by my predecessor that notice of mining locations should be recorded in the local land offices. I also recommend earnestly the abolition of the law of the apex. It should not be allowed to gain any further foothold in the public domain and it should be abolished now before it has been extended any further in Alaska. It is unsound in principle and leads to constant and expensive litigation. The comprehensive application of the proposed repeal to the public lands outside of Alaska has been opposed in some quarters upon the ground that the greater portion of the mineral areas in these lands have already been entered, but I see no reason, however, why this should deter us from abolishing the law of the apex without prejudice to the existing rights which have been acquired under it.

The general mining laws should be amended by the addition of a provision requiring final entry and payment to be made upon all mineral and mill-site locations within a fixed period after date of location of the claims, exclusive of the time covered by bona fide pending adverse claims or protests. This will be in harmony with other laws relating to the acquisition of the title to public lands which almost without exception, provide that after the performance of certain acts by claimants they must, within a prescribed period, apply for patent and make the payments required by law for the lands sought. If mineral locators were required within a specified time to come forward with their applications for patent, the burden would be upon them to show the validity of their claims, by limitation many invalid claims would lapse, and where the claims are bona fide it would tend to incite the owners to a more diligent development thereof and a more careful compliance with the terms of the law.

The present law making deposits of mineral oils in the public domain subject to location and entry under the placer mining laws (act of Feb. 11, 1897; 29 Stat., 526) is unsatisfactory, from the standpoint of both the individual and the Government. It does not afford protection to the bona fide explorer while he is engaged in the expensive operation of discovering and exploiting the deposits, which in most instances lie far beneath the surface. When oil is discovered there is no adequate return to the Government and no legislative provision insuring legitimate development and preventing monopoly. I therefore suggest that the present law should be repealed and a law enacted providing for the leasing of such deposits, the law to contain provision for the protection of prospectors during an exploration period preliminary to the leasing of the lands after the discovery of oil therein. I also recommend the enactment of legislation to permit the disposition of the surface of lands containing, or believed to contain, deposits of oil, under appropriate agricultural land laws, reserving to the United States for future disposition the deposits of oil therein.

The withdrawal act of June 25, 1910, contains a very serious defect in the peculiar wording of the first portion of section 2 of the act, reading as follows:

> That all lands withdrawn under the provisions of this act shall at all times be open to exploration, discovery, occupation, and purchase under the mining laws of the United States, so far as the same apply to minerals other than coal, oil, gas, and phosphates.

The purpose of this provision is said to be the continuation of the right to mine the metalliferous minerals on withdrawn lands. Instead of saying this, however, the act permits the mining of *all* minerals "*other* than coal, oil, gas, and phosphates." This leaves no adequate protection for withdrawals of land valuable as potash or nitrates, which should be held by the Nation for the future use of its agricultural interests. Attempts have even been made to secure title to withdrawn lands for the mining of sand and gravel. While these entries have been rejected, more difficult questions arise in connection with claims for the mining of stone and gypsum. Such entries open the way to serious abuse, especially when attempted on land withdrawn for important public purposes like water-power sites or storage reservoirs. It is of real and pressing importance that the language quoted from section 2 of the withdrawal act of 1910 should be amended to read as follows:

> That all lands withdrawn under the provisions of this act shall at all times be open to exploration, discovery, occupation, and purchase under the mining laws of the United States, so far as the same apply to metalliferous minerals: *Provided*, That the rights of any person, etc.

WATER-POWER LAWS.

The present laws relating to water power are hopelessly inadequate. The protection of the public interest is supposed to be accomplished by the statutory provision that permits for the development of water power shall be revocable at any time at the will of the administrative officials. This is thoroughly unsound both in principle and in practice. Many of those who would be willing to invest capital in the legitimate development of water power, but who wish to have the security which legitimate development rightfully demands, are unwilling to risk their investment on a tenure revocable at discretion. The result is that such capital as is invested in water-power development under Federal permit claims to be entitled to extraordinary returns on account of the extraordinary risk theoretically involved. At the same time the investors having once spent their money, proceed largely, if not entirely, upon the assumption that there is, in fact, no such risk as the revocable nature of the permit would imply. They assume, and properly assume, that the Government not only would not confiscate the investment, but that it will treat the investor fairly in any future readjustment of the terms of its grant. The result of the whole matter is that we have far less development than would be possible under a proper system and the development which we do have proceeds under what seems a legitimate excuse for exacting a larger return than should be necessary. It requires no elaborate argument to demonstrate that the substitution of water power for coal consumption is a clear public gain. Coal can be burned but once and in the process the greater portion of its potential energy is wasted by the imperfect methods and machinery now employed. The supply of falling water is perpetually renewed by natural forces and is wasted chiefly by nonuse.

The whole subject of water-power development and control should, in my judgment, receive the immediate consideration of Congress, and constructive legislation should be adopted without further delay. The limited powers of the Federal Government restrict its interest in this subject to power sites of two kinds—those upon the public domain and those on navigable streams. Some doubts have been expressed as to the authority of Congress to control the latter effectively. I do not think that these doubts are justified. I believe the Federal Government has adequate constitutional power to control water-power development both in navigable streams and upon the public domain and to exact compensation and to impose proper conditions in either case. It is also apparent that the Federal Government can act more effectively than the States in many cases, and that this will be increasingly true as long-distance transmission and the yoking together of distant sources of water power not only justify but require the extension of Federal regulation over hydro-electric enterprises as agencies of interstate commerce. Many of our most important streams are interstate and some international in character. The States themselves have called and are calling upon the Federal Government to improve and to protect these streams. When such protection and improvement develops water power or adds to the value of water power already existing, there can be no sufficient reason adduced why the cost of the protection and the improvement should not be repaid in whole or in part out of the values thus created, nor can there be any adequate reason why the Federal Government should pay the cost of this improvement merely to turn over the revenues to the States to be used for other purposes than water development. Both on navigable streams and on the public domain the Federal Government will be more and more called upon to make expenditures for the protection of the watersheds and of the streams themselves. This expense should not be borne wholly by the general taxpayers if the expenditure produces special local benefits of the kind described. On the other hand, the development of water power, especially where it is sold in the form of electrical energy for lighting, heating, traction, and general power purposes, gives to the community where it is consumed a very necessary and important interest in the prices at which the electric energy is sold and in the character of the service. The regulation of both prices and service should, as a general rule, be committed to the State and to its agencies delegated for that purpose. The locality in which the water power is developed also has, on its part, a legitimate interest in the application of any rental which may be exacted for such development.

It is frequently said that power-site rentals must, in the last analysis, increase the price of power paid by consumers and thus be drawn from the local community. Two reasons why it is not true, even of a public utility, are suggested. In the first place there are frequently two localities—the producing and the consuming one—which are not identical. Electricity generated at a point in the national forests of the Sierras might be consumed either in San Francisco or Los Angeles. The rentals now paid for this development by the hydro-electric companies go in part to the support of schools and roads in the counties where the forests lie and in part to the Federal Treasury as a partial offset to the expense of maintaining the national forest. It is substantially true to say that the water-power revenue is expended in the mountains where the power is developed. Should this benefit be taken entirely from the mountain communities and bestowed upon the cities in the form of cheaper electric power? This conflict between the interests of the producing and consuming communities is destined to increase as better knowledge and improved apparatus give a longer and longer radius of high-tension electric transmission.

But even if the interests of the producing and consuming communities were identical, a reduction or abolition of water-power rentals could not, as a general rule, result in lower prices for electric energy. This is due to the fact that electricity is generated not only by water power, but also, and still more extensively, by steam power. There are very few communities where water power is, even approximately, the sole generating agent. The public can not, as a practical matter, fix one price for electricity generated by water power and another price in the same locality for the same commodity generated by steam. To do this where hydro-electric energy can not supply the whole demand would give a great and unjust advantage to an arbitrarily chosen and favored class of consumers. Now, steam is generally the more costly producing agent and therefore the price of electricity generated by water power is, in any locality, normally fixed by and but little lower than the price of electricity generated by steam power. Public regulation may reduce these two prices together, but the minimum limit of such reduction must be that price at which a well-equipped and well-managed steam plant could earn a proper return. This minimum limit is generally well above a fair return on the actual cost of water-power development. The difference goes to the hydro-electric corporation, unless retained for the public by rentals or taxes paid into the public treasury and expended for public purposes.

No correct or permanent solution of the water-power question can be reached until the interests of the State and of the Nation have been reconciled and coordinated, and this can now be done. The Federal Government should not part with any of its constitutional powers. Their exercise is certain in the future to become essential to the protection of the public interest. At the same time, it should not interfere with the State or local control except as the public interest may demand. Permission for the development of water power on navigable streams and from nonnavigable streams on the public domain should be granted by the Federal Government only on the payment to it of rentals which should be readjusted at periodic intervals of no longer than a decade under general provisions which will protect the interests of the investor and of the public. This compensation should always be reasonable and should generally be small in the case of new and experimental enterprises. As a general principle, the revenues derived in this way should be devoted to waterway improvement, with special care for the river system and watershed of the stream from which the revenues are derived. It is increasingly clear that proper development and protection of stream flow for all purposes, including those of navigation, domestic use, irrigation, and power require that the stream and its branches from source to mouth should be regarded as essentially a unit. This, indeed, is one of the reasons why the Federal Government is the most appropriate agency, if not the only available agency, for the comprehensive development of our waterways. Logically, the revenues derived from water power may belong to the Nation for its general use, but it would seem that national and local interests can best be reconciled by devoting these revenues to local improvements so far as such improvements are necessary or wise. Such a use removes one of the principal objections to Federal control.

The water-power permits issued by the Federal Government should also expressly provide that the permittee, by the acceptance of the grant, agrees to comply with such reasonable regulations of his rates and service as may be prescribed by the State or the appropriate State agency delegated for this purpose. Such a provision as this may technically not be necessary in many cases, as the use of water power for local public utilities usually requires State or local consent to the occupation of public streets and highways for its effective distribution, which gives a basis for local regulation, but the insertion of this provision in the Federal permit will remove any possible doubt. It should be so worded as to indicate that the Federal Government, without parting with any power it may possess in this regard, has adopted the general policy of delegating the function of regulation in all cases not interstate in character to the State and local authorities so long as these authorities protect the public interest. Such a system as I have suggested will result in a certain degree of automatic control of water-power permits in the public interest, for when the period of readjustment of the compensation arrives the Federal Government will naturally inquire into the condition of the grant, and if the grantee has been furnishing good service at reasonable rates and making only reasonable profits there will, ordinarily, be no occasion for increasing the compensation. If, on the other hand, for any reason whatever the local authorities have been lax and the grantee has been permitted to make an unconscionable profit, the Federal Government can increase its compensation and secure for the public in this way its proper share. In the exercise of this right, as in all of the terms of the grant, the interests of the grantee should not only be amply protected, but should be treated with liberality, so that the interest of the public may be promoted by the vigorous development of our water power. My purpose, however, is not to discuss the details of a water-power grant, but to point out that there is no necessary conflict between State and Nation in a rightly considered water-power policy and to urge the prompt adoption of such a policy and the passage of the necessary legislation.

REORGANIZATION OF GENERAL LAND OFFICE.

There is also a pressing need for some fundamental reorganization in the General Land Office itself. The mass of administrative work which that office is called upon to handle requires the very highest degree of efficiency in its organization and personnel. The present system fails to take into consideration either the quantity of the work or the importance of the interests intrusted to its employees. This is especially true in the higher grades in the service, which now are clearly underpaid for work requiring the highest degree of technical skill and personal integrity. Men are paid comparatively small clerical salaries for work involving property interests of immense value and also matters of smaller financial importance but of the most serious consequence to individual claimants. These salaries should be increased so that they will at least approximate proper compensation for the character of work required. There is also another fundamental item which should be given immediate attention. The distribution of the public domain for actual settlement and development is properly and necessarily an administrative function. It can not be transferred to the courts for adjudication upon the facts arising in each individual case.

Questions of administration or of policy connected therewith must remain in the hands of the administrative force. At the same time in the interest of fair dealing toward the individual claimants their claims should not be finally passed upon solely by those who investigate and report upon charges of fraud or noncompliance with the statutes. To prevent this the General Land Office has sought to differentiate between the executive and the quasi-judicial functions which it exercises. This effort would be aided by sufficient appropriations to justify an increase of the membership and the pay of the Board of Law Review so that that board can be given the dignity and ability of a distinctively quasi-judicial tribunal with the jurisdiction and duty to determine the legal questions and issues of fact involved in contested claims under the administrative supervision of the Commissioner of the General Land Office. The right of appeal to the Secretary of the Interior should remain as at present, but the appropriations for the Office of the Assistant Attorney General for the Department should be increased to provide for a greater number of specially qualified assistants to be assigned to these appeals and to original quasi-judicial proceedings before the Secretary. There should, of course, be preserved the existing right of recourse to the courts to obtain their construction of the law in cases where the issue involved is purely one of law and not of fact. If the quasi-judicial force of the Department and of the General Land Office is strengthened as suggested, I am sure that the conflicting interests of the claimants and of the Government will be more carefully and correctly considered and decided than is now possible. The business of the Department will be expedited and all those who have contested claims before the Department for adjudication will be better satisfied.

BUREAU OF NATIONAL PARKS.

There are twelve national parks, embracing over 4,500,000 acres, which have been set apart from time to time by Congress for the recreation of the people of the Nation. While public interest in, and use of, these reservations is steadily increasing, as shown by the growing number of visitors, adequate provision has not been made for their efficient administration and sufficient appropriations have not been made for their proper care and development. At present, each of these parks is a separate and distinct unit for administrative purposes. The only general supervision which is possible is that obtained by referring matters relating to the national parks to the same officials in the office of the Secretary of the Interior. Separate appropriations are made for each park and the employment of a common supervising and directing force is impossible. Many of the problems in park management are the same throughout all of the national parks and a great gain would be obtained and substantial economies could be effected if the national parks and reservations were grouped together under a single administrative bureau. Bills to create a bureau of national parks have heretofore been introduced in Congress, and in my judgment they should immediately receive careful consideration so that proper legislation for this purpose may be enacted. Adequate appropriation should also be made for the development of these pleasure grounds of the people, especially through the construction of roads and trails, and their proper care and maintenance. In several of the national parks there are large private holdings which should be acquired by the Government.

RETIREMENT.

I earnestly recommend the enactment of legislation authorizing the retirement of employees who, after long and faithful service, are disabled by age or infirmity from the efficient performance of their duties. The civil servants of the Government, like those in the military and naval service, are debarred from the chance of large gains, the hope of which is a constant stimulus to men in private business. Moreover, those of technical or superior administrative ability are and must continue to be paid smaller salaries than they would command in private employment. It is therefore impossible for them to acquire financial independence or make due provision for old age, either by way of profits or by way of savings from their salaries. Considerations of humanity and justice might well be urged against the dismissal of employees who have given the years of their strength to faithful and efficient public service and against their assignment to the lower grades of menial or clerical duties as an alternative to dismissal. But I prefer to put the matter on other and more selfish grounds. The Government simply can not afford not to retire these employees with due and honorable provision for their old age, and this for two reasons.

In the first place, many able and energetic men serve the Government at salaries far below the commercial standard for like services. They choose to do so because the public service satisfies their best and highest ideals of personal integrity and professional achievement. Such men are continually forced out of the service by the necessity of making due provision for themselves and their families before old age comes upon them. If the Government would insure them against this peril it could continue to employ them at salaries far less than a private corporation would be compelled to pay. Every consideration of economy and sound business policy requires that their services should be retained on terms so favorable to the Government. The loss, taken in the mass, is irreparable, for the system operates as a survival of the unfittest by continually drawing off the more energetic and abler men, leaving a larger and larger proportion of the inefficient in the public service. In the second place, the Government is paying much if not most of the cost of a proper retirement system through the inevitable relative inefficiency of the present plan. Not only are superanuated employees dropped to and retained in the lower grades because of sympathy yielding to personal or political pressure, but in the higher grades, from which the rank and file of the service inevitably derives its spirit and tone, there is a tendency to retain men who have lost the alertness and enthusiasm essential to the highest efficiency of their own work, and still more essential for inspiring in and requiring of their subordinates such alertness and enthusiasm. Not only do they thus fail to make the positive contribution to the general efficiency of the service which is due from men in their position, but they have a negative effect in the same direction by blocking the avenues of promotion and legitimate ambition. The men below them not only fail to receive the proper stimulus of precept and example, but are at the same time deprived of the hope of promotion which ought to be the reward of efficient service.

This condition is now becoming apparent. It has been delayed by the fact that the widespread application of the principle of permanency in the public service goes back less than one generation, and by the further fact that the industrial and social problems of recent years have forced the Government into new fields of activity and thus compelled the organization of new bureaus and departments. These new administrative units have been largely recruited from young men who are still in the prime of life. Many of the older bureaus and departments have from similar causes largely increased their personnel, recruiting them chiefly from young men. This sudden expansion of governmental activity has postponed and mitigated the worst evils inherent in the present system; but sudden expansion can not continue indefinitely. We must face and provide for normal conditions of growth. Under such conditions general efficiency in the public service is impossible without due provision for the retirement of aged employees. This is attested by the experience and practice of foreign governments, which have long had a permanent civil service, and by that of large railroad and commercial corporations in our own country.

LOWER COLORADO RIVER.

On June 25, 1910, in a special message you invited the attention of Congress to the situation along the lower Colorado River as then understood. Conditions appeared to be such that unless prompt and vigorous steps were taken a very large loss in land values to the people of the Imperial Valley would result. The suggestion was made that a suitable sum be placed at your disposal to meet this emergency. By resolution approved June 25, 1910, Congress appropriated $1,000,000 for the purpose of protecting the lives and property interests of the citizens in the Imperial Valley. To the Secretary of the Interior was delegated the supervision of the work. A detailed investigation of the physical conditions on the ground was made by a member of the Mississippi River Commission, who was subsequently employed to supervise the work. The preliminary report submitted by him, after thorough consideration, was approved and immediate steps taken looking to the actual construction of the project in accordance with the approved plans which it was believed would result in returning the Colorado River to its old channel. Delays in the completion of the necessary arrangements with the Government of Mexico were encountered, and a successful consummation of the project was imperiled by the rapidly approaching flood season, which rendered the work hazardous. The situation was further complicated by the disturbed political conditions in Mexico, as the result of which labor conditions on the project were greatly demoralized.

After determined efforts the break at Abejas River was successfully closed and levees on the west bank of the Colorado for a considerable distance north and south of the Abejas were constructed. The early summer floods again broke through at the Abejas, jeopardized the permanency of the work and ultimately resulted in considerable damage to the levees. The essential part of the damaged portions is readily susceptible of repair during the present low-water season, and such repair is believed to be vital to the interests of the people of Imperial Valley. This work is now being done.

By your direction I convened a board of persons interested in and familiar with conditions along the Colorado River to make a careful study of the work accomplished and to suggest plans for future operations. The board recommends that the work be continued along certain lines and is of the opinion that to meet the present emergencies the sum of at least $1,000,000 should be provided. The systematic treatment of the river is a problem to be worked out in connection with the Government of Mexico, and the board suggests the creation of an International Colorado River Commission, to be composed of Mexican and American engineers, with ample authority to investigate and report to their respective Governments a basis for the final adjustment of all questions affecting the use and control of the waters of the Colorado. I heartily concur in this recommendation. The problem is one of great magnitude and moment. The interests of the Government of the United States are such as, in my opinion, justify the early consideration of the entire subject by Congress.

Any provision for future operations along the Colorado River which Congress may see fit to make should authorize the expenditure of any portion of such fund within the limits of the Republic of Mexico in accordance with agreements heretofore or hereafter made with that Government.

I have heretofore transmitted to you for submission to Congress the following documents bearing on this matter:

(1) Report of J. A. Ockerson of May 20, 1911.

(2) Copy of letter of Secretary of Interior, dated June 1, creating board.

(3) Report of board, dated June 7, 1911.

(4) Statement of physical and related facts accompanying report of June 7, 1911.

NEW BUILDING NEEDED FOR PATENT OFFICE AND DEPARTMENTAL RECORDS.

I call special attention to the congested condition of the buildings occupied by this Department and to the necessarily decreased efficiency of the clerical force because of overcrowding. Three of the bureaus of this Department—the Geological Survey, the Bureau of Mines, and the Reclamation Service—are located in rented quarters at an annual combined rental of $52,800. Good administration would seem to indicate that provision should be made for these bureaus to be housed in Government-owned buildings. The Pension Office and the Office of Indian Affairs in the Pension Office Building, the General Land Office and the Bureau of Education in the old Post Office Department building, and the Office of the Secretary and the Patent Office in the Patent Office Building are located in Government-owned buildings.

Each of the above branches of this Department has accumulated and is constantly accumulating records of priceless value to the Government. In some, notably the Geological Survey, the Patent Office, the Office of the Secretary, the General Land Office, and the Office of Indian Affairs, these records have accumulated to such an extent that it is beginning to be a grave question how to provide for future accumulations, and those now existing are crowded in every available space—in corridors, attics, workrooms, basements, and subbasements—constantly exposed to accumulating dust, dampness, and improper handling, to say nothing of the ever-existent grave danger from fire and consequent total destruction. There should be provided at the earliest practicable date a properly constructed fireproof central filing place for the records of this Department or a hall of records for the departmental service in the District of Columbia generally.

The most congested condition with respect to the clerical force occurs in what is known as the Patent Office Building, housing the Patent Office and the Office of the Secretary. This Department was organized and created by the act of March 3, 1849 (9 Stat., 395), and among the bureaus transferred to it under the organic act was the Patent Office. From the time of the Department's organization until 1853 the Department proper (that is, the Office of the Secretary, comprising the Secretary and his staff of assistants and clerical force, which now includes the Office of the Assistant Attorney General for the Interior Department) occupied rooms in a building rented by the Treasury Department. These quarters appear to have been unsuitable and inadequate, and the Secretary of the Interior in his annual report for 1851 (p. 34, H. R. Ex. Doc. No. 1, 31st Cong., 2d sess.) formally announced to the President and Congress his intention, as soon as the other wing of the Patent Office was completed, to transfer to it the Department proper and the different offices thereto attached, which proposition appears to have received congressional sanction. The total floor space of the Patent Office Building is 148,014 square feet, of which 114,060 square feet are assigned to the use of the Patent Office, embracing 934 employees, and of which

33,954 square feet are assigned to the use of the Office of the Secretary (including the Office of the Assistant Attorney General), embracing 266 employees.

When the Patent Office Building was erected it was evidently believed that provision was being made for the growth in volume of business and clerical force of the Patent Office, beyond any possibility of future overcrowding. The fourth story of this building was architecturally designed to provide an exhibition place for all the models which should accumulate, together with the scientific library. Before 1893 it became necessary to remove the patent models from the building and devote this space to clerical purposes. Wooden partitions have been erected in almost the entire space theretofore devoted to exhibition purposes, thereby cutting the space up into small rooms, poorly ventilated, badly lighted, and overcrowded with records, which space has been assigned to the use of various divisions of the Patent Office. The scientific library, which is on that floor, is so limited architecturally that it has become overcrowded, and it is almost impossible to provide the proper ventilation and to light it satisfactorily. In this space, under these conditions, it is necessary to provide accommodation for attorneys who from day to day are obliged to examine the records of patents issued or pending. Every effort has been made to prevent the accumulation of dust by the vacuum process of cleaning, but under existing conditions the practical results have been most unsatisfactory. Every available foot of space for clerical assistance and the filing of records in the Patent Office has been occupied by them, and I am convinced that the Department is now face to face with the proposition of renting outside quarters for the accommodation of the constantly expanding activities of the Patent Office.

The Patent Office throughout its existence has been self-sustaining, and according to the accounts kept by it has turned into the Treasury a total surplus of approximately $9,000,000. Attention is invited to the report of Secretary Garfield for the fiscal year ended June 30, 1907, at page 33; to the report of Secretary Ballinger for the fiscal year ended June 30, 1909, at page 33; and also to Secretary Ballinger's report for the fiscal year ended June 30, 1910, at page 49. Senate document 543, Sixty-first Congress, second session, shows an effort made to obtain relief for this situation by securing an appropriation of $220,000 for the erection of an addition to the Patent Office Building. This effort failed, and a renewal of the estimate has been submitted with the estimates for the fiscal year ending June 30, 1913 (Book of Estimates, p. 350). Even though the Office of the Secretary were removed from the Patent Office Building and provided with quarters elsewhere, it would be but a short time until the same condition would again exist, because the overcrowding now existing in the Patent Office, in relieving itself, would extend practically over the entire area now occupied by the Office of the Secretary.

I can not too strongly urge the grave necessity now present that steps be immediately taken to provide a new, modern, properly equipped building for the use of the Patent Office, constructed upon lines which will suffice for its future needs and growth and be a monument to the inventive genius of the American people. The space provided in such a building for future growth might be used for the priceless records of the other bureaus of the Department of the Interior until other fireproof buildings or a hall of records is provided.

OFFICE OF ASSISTANT ATTORNEY GENERAL.

The following table in some degree illustrates the volume of work disposed of by this office in the year ended October 1, 1911:

Work of office of Assistant Attorney General.

	Public lands.		Indian.	Pension.	General opinions.	Disbarment.	Miscellaneous.	Total.
	Appeals.	On review.						
Pending Oct. 1, 1910	153	39	45	[1] 536	2	3	73	851
Received to Oct. 1, 1911	3,142	532	9,922	514	254	12	2,251	16,627
Total	3,295	571	9,967	1,050	256	15	2,324	17,478
Disposed of Oct 1, 1910, to Oct. 1, 1911.	2,015	470	9,929	[2] 597	238	12	2,151	15,412
Pending Oct. 1 1911	1,280	101	38	453	18	3	173	2,066

[1] July 1, 1911. The work formerly done by the Board of Pension Appeals was transferred to this office July 1, 1911.

[2] Since July 1, 1911.

Prior to the abolishment of the division system in the office of the Secretary in April, 1907, the office of the Assistant Attorney General was charged with the adjudication of appeals from the General Land Office and the preparation of opinions on miscellaneous questions of law. Little by little the scope of its work has been increased until it has included Indian, pension, reclamation, and other matters. In the six months prior to April 1, 1907, 1,163 matters were disposed of—an average of 269 a month. In contrast, an average of 1,285 a month marks the work done during the year ended October 1, 1911. The office was called upon to consider 17,478 matters during that period and disposed of 15,412. During the corresponding period in 1909 to 1910, 14,399 matters came before the office for consideration, and 14,084 were disposed of—an average of 1,174 a month.

Aside from these matters, and not recorded in the above table, there is handled in this office a large amount of correspondence between this

Department and individuals and between this Department and other executive departments of the Government, particularly with the Department of Justice, in relation to litigation; also the examination of bills pending in Congress and the preparation of reports thereon. Suits in the local courts against the Department are defended by the Assistant Attorney General for this Department. In the year ended June 30, 1911, 24 cases were disposed of in the Supreme Court of the District, in which the Department was successful in all but one, and this has been reversed on appeal to the court of appeals. In the latter court the Department submitted and was successful in 12 cases during the year. In addition to this there were many interlocutory proceedings.

Notwithstanding the great volume of work thus presented to this office for consideration and action, the disposal thereof has proceeded with great care and such dispatch as its importance and difficulties and the number of the force permitted.

GENERAL LAND OFFICE.

The work in the General Land Office during the past year has been energetically pushed. The majority of the most important lines of work in the office are up to date.

There has been no relaxation in the work of the prosecution of frauds against the United States and the attempted unlawful acquisition of lands.

The closer scrutiny paid to applications under the "Carey Act" has demanded the devotion of a larger amount of time on the part of the field force to this work. Not only is an examination made of the land sought to be segregated, but the question of sufficiency of water and practicability of the proposed scheme is looked into.

Every care, by examination in the field, is also being taken that no mineral lands are lost to the United States under school land, railroad, or other grants, providing for the acquisition of agricultural lands only.

There has been a close cooperation between the work of the field force of the General Land Office and the work of the Geological Survey in the classification of lands.

The investigation of coal claims in Alaska is proceeding as rapidly as possible. A decision has been rendered in the so-called "Cunningham" cases, holding the entries for cancellation. Hearing has been had in one other group, and examination made on the ground in a large majority of the cases, to see whether or not a mine or mines have been opened in accordance with the provisions of law.

The total number of locations in Alaska coal claims is given as 1,125; the number of applications for patent, 521; number of notices of charges served, 172; number of answers to charges filed, 125; number of expiration notices served, 566; number of answers to expiration notices filed, 90; number of entries yet to be investigated as to good faith, 262.

Up to July, 1911, indictments returned in Alaskan criminal proceedings, affecting coal lands, covered 641 claims out of a total of 1,125 coal claims.

The vexed question of adjustment and adjudication of claims in the Imperial Valley, California, has proceeded very satisfactorily. This matter, which has been pending for so many years, has been virtually settled.

The total cash receipts from the sale of public lands, including fees and commissions on both original and final entries, for the fiscal year 1911, were $7,245,207.69. Miscellaneous receipts were as follows: From sales of Indian lands, $2,822,600.71; reclamation water-right charges, $892,414.29; sales of timber in Alaska, depredations on public lands, sales of Government property, and copies of records and plats, $129,704.91, making the aggregate total of cash receipts of the General Land Office for the fiscal year 1911, $11,089,927.60, a decrease of $373,996.46 from the preceding fiscal year.

The total expenses of district land offices and salaries and commissions of registers and receivers, incidental expenses, and expenses of depositing public moneys during the fiscal year ended June 30, 1911, were $870,242, a decrease of $3,395.33. The aggregate expenditures and estimated liabilities of the public-land service, including expenses of district land offices and surveys, were $3,195,759.38.

The total area of public and Indian land originally entered during the fiscal year 1911 is 17,639,099.54 acres, a decrease of 8,752,169.55 acres as compared with the area entered during the fiscal year 1910.

The area patented during the fiscal year 1911 is 12,272,495 acres, an increase of 1,289,345 acres as compared with the fiscal year 1910.

The number of patents issued during the fiscal year 1911 were 72,189, as against 72,080 for 1910.

During the past year there were approximately 215,300 acres of agricultural lands in national forests opened to settlement and entry in accordance with the provisions of the act of June 11, 1906 (34 Stat., 233).

COMMISSIONER'S RECOMMENDATIONS.

The Commissioner of the General Land Office, in his annual report, recommends legislation providing for some changes in the administration of his office, and other matters of various kinds. Some of them have been discussed hereinbefore in this report. He makes a number of recommendations which should be given careful consideration. Special attention is called to the following:

(*a*) The abolishment of the office of receiver in the local land offices, and the substitution of a civil-service employee, drawing an adequate but smaller salary than that allowed under existing statute to the receiver; it is believed that a saving of about $150,000 per annum could thus be effected, and that better results would be obtained.

(*b*) The enactment of legislation authorizing the taking of proofs on the land. In this way the interests of both the settler and the Government would be better subserved and more expedition attained.

(*c*) An act making false swearing in relation to the character of the land of which entry is sought, or concerning the legal qualifications of the would-be entryman, an offense punishable by fine or imprisonment, or both.

(*d*) An act empowering registers and receivers to require a witness in a pending case to bring with him and produce papers, books, and documents in his possession which constitute material and important evidence.

(*e*) The renewal of the appropriation of $3,000 made by act of June 25, 1910 (36 Stat., 797), providing for the preparation and publication of the revised edition of the "Manual of Surveying Instructions."

(*f*) Legislation providing for the punishment of unscrupulous and incompetent professional locators by fine or imprisonment, or both.

(*g*) An amendment of the act of January 31, 1903 (32 Stat., 790), so as to provide for uniform fees chargeable by officers before whom depositions provided for in said act are submitted.

(*h*) The amendment of section 26 of the act of June 6, 1900 (31 Stat., 321), so as to subject mining claims to the easement of a public roadway, 60 feet wide, along and parallel to the shore line of navigable waters in Alaska, such as is now provided in section 10 of the act of May 14, 1898 (30 Stat., 409), entitled "An act extending the homestead laws and providing for right of way for railroads in the District of Alaska, and for other purposes."

PUBLIC SURVEYS.

The first year's work under the direct system of surveys has been very successful. It is estimated that, in a survey of approximately 30,000 miles, the saving to the Government by the direct system, as compared with the contract system, will be about $5 a mile, or in the neighborhood of $150,000. In addition there is a saving of from one to two years in time in the final approval of the surveys performed.

TEXAS-NEW MEXICO BOUNDARY.

The so-called "Clark" boundary line between Texas and New Mexico has been retraced and monumented in accordance with the provisions of the resolution passed by Congress February 16, 1911 (36 Stat., 1455). The work was done economically and efficiently.

CAREY ACT.

The records of the Land Office show that there is an increasing demand for segregation lists under the Carey Act. During the last fiscal year there were examined in the neighborhood of 1,650,000 acres of selections by the various States to which the Carey Act applies. There have already been withdrawn under the act of March 15, 1910 (36 Stat., 237), for Carey Act exploration and survey, 3,500,000 acres.

STATE AND TERRITORIAL GRANTS.

During the past fiscal year there were approved to States and Territories an area of 316,572.44 acres, of which 299,123.17 acres were school-land selections.

RAILROAD GRANTS.

During the year 1911 there were patented on account of railroad and wagon-road grants an area of 1,152,827.77 acres.

CHIPPEWA LOGGING, MINNESOTA.

During the past fiscal year there were logged under contracts on ceded Chippewa lands 80,005,150 feet of timber, of the value of $572,830.73, as compared with 88,503,880 feet of timber, valued at $553,005.42, during the year 1910.

SALES OF CHIPPEWA PINE TIMBER.

On September 15, 1910, a sale of pine timber was held at Cass Lake, Minnesota, at which there was sold timber estimated to contain 51,310,000 feet of white pine and 263,475,000 feet of Norway pine, the total amount of the accepted bids being $2,709,330.04, an average price of $8.59 per thousand feet. This was the largest sale of Chippewa timber yet held. All of the unsold pine timber on ceded Chippewa lands was offered for sale at Cass Lake, Minnesota, on October 21, 1911. The price paid for timber on ceded Chippewa lands sold at the different sales is $5,933,242.41.

GEOLOGICAL SURVEY.

The scientific investigations of the Survey have been continued along lines similar to those followed in other years and the usual number of contributions have been made to the knowledge of geology and related subjects. The appropriations for the work of the United States Geological Survey for the fiscal year 1910–11 aggregated $1,477,440.

Classification of public lands.—Among the special features of the year's activities the work in the public-land States should be given first place.

The field investigations and examinations have been more extensive and more detailed, and reports covering a wider range of subjects have been prepared and submitted to the Secretary's Office and to the General Land Office and the Office of Indian Affairs. The Geological Survey is called on for reports covering lands listed for patent and lands which it is proposed to eliminate from the Indian or forest reservations and throw open for settlement, in order that their mineral or nonmineral character or adaptability for power or irrigation purposes may be determined. All Carey Act lists are submitted to the survey for a statement as to the sufficiency of the water supply and the adequacy of the proposed plan of irrigation before the lists are approved for segregation.

Coal lands have been classified during the year at an increased rate. The area appraised as coal land during the fiscal year 1910-11 exceeded that so appraised in the preceding year by 3,000,000 acres; and the area classified as noncoal land during 1910–11 is 2,386,444 acres greater than that so classified in 1909–10. On the other hand, the average price fixed per acre and the total appraised value are notably less for the last year than for the preceding year. The difference is due to the large acreage of lignite and low-grade subbituminous coals in eastern Montana and Wyoming appraised at the minimum value fixed by law.

Two great withdrawals of land for determination of its coal character were made during the year—one in the Dakotas and one in Idaho. The restorations have, during the past fiscal year, been more than offset by the withdrawal of areas indicated as coal bearing by new information or by a study of data already at hand. However, in Colorado, Montana, and Wyoming, where the field work was concentrated during the season of 1910, the restorations far outbalance the withdrawals. It is probable that the withdrawn area has reached its maximum this year and will steadily decrease hereafter.

During the year 630,604 acres in California and Wyoming were withdrawn from entry to be examined for oil, and 1,232,719 acres in the same States, shown by field examination to be non-oil lands, were restored, making the withdrawals for oil outstanding June 30, 1911, 3,970,429 acres in eight States and Territories. In addition all oil lands in Alaska, comprising an unknown area, were withdrawn during the year.

In the early part of the fiscal year the outstanding withdrawals of phosphate land made by the Secretary of the Interior were ratified by the President under the act of June 25, 1910. A deposit of phosphate rock in southwestern Montana, similar in character to the deposits of Utah, Idaho, and Wyoming, and at the same geologic horizon, was discovered by the survey. This discovery is important not only because of the quantity of phosphate found, but because it indicates the possibility that the deposits of phosphate rock are distributed over a much wider territory than had formerly been supposed. The area withdrawn as a result of this discovery comprises 33,950 acres, which, with withdrawals in Florida and Utah, make a total of 65,589 acres withdrawn during the year. Field examinations in Idaho resulted in the restoration of 149,929 acres, leaving in phosphate withdrawals June 30, 1911, a total of 2,399,416 acres.

The completion of the classification of lands within the Northern Pacific Railroad grant in Montana and Idaho provided for in the sundry civil act of June 25, 1910, was made by the Survey. Work of the year resulted in the classification of 288,465 acres.

The work of classifying the public lands with relation to their value for water-power development has followed the general plan pursued in previous years. On July 2, 1910, the earlier withdrawals, amounting to 1,454,499 acres, were ratified and continued by the President. As a result of field investigations, 143,555 acres included in withdrawals were determined to be without value for power purposes and were restored to the public domain and 204,460 acres were included in new withdrawals, the total area withdrawn at the close of the fiscal year amounting to 1,515,423 acres.

Eight hundred and fifty-one applications for right of way across the public lands for railroads, canals, ditches, and reservoirs for irrigation, mining, and municipal supply and power development have been passed on by the Survey.

Thirty-one segregation lists prepared under the Carey Act have been referred during the year to the Survey for report. The projects represented by eight of these lists were determined to have sufficient water supply for reclaiming the lands considered. Examination of 18 applications showed that under the plan of irrigation proposed by the State the projects contemplated would have an insufficient water supply, and reports were made accordingly. At the close of the fiscal year three applications were awaiting a detailed statement by the applicants of the plan of reclamation proposed, and two were under consideration.

The designation of non-irrigable areas as subject to entry under the enlarged-homestead act has called for an increasing amount of field investigation. By the act of Congress of June 17, 1910, the provisions of the original act, somewhat modified, were extended to the State of Idaho, and a large area in Idaho has been opened to such entry. The greater part of the investigations and designations under the enlarged-homestead act has been made on account of petitions for action on specific tracts. Two hundred and forty-eight petitions were received and 162 were acted upon. At the close of the year 137 petitions were pending, most of them awaiting reports on uncompleted field examinations.

There is hereto appended (p. 89) tabular statements showing progress of coal classification and valuation, oil land withdrawals, phosphate land withdrawals, power site withdrawals, designations under the enlarged homestead act in the various States and Territories, and metalliferous classification of Northern Pacific Railroad grant lands in Montana and Idaho.

Geologic Branch.—Geologic surveys and investigations were continued in 39 States and Territories by a force of 129 geologists. Over 76 per cent of the appropriation was expended in the 16 States and Territories containing the large areas of public lands. Systematic detailed surveys of important mining districts were continued in Colorado, Utah, Nevada, California, Idaho, Montana, and Arizona, and general geologic and paleontologic investigations were conducted in all parts of the country.

In Alaska 12 field parties covered 13,815 square miles by reconnoissance topographic surveys and 36 square miles by detailed topographic surveys. Detailed geologic surveys were made of 321 square miles and geologic reconnoissance surveys of 8,635 square miles. Considerable time was also spent in studying special problems connected with the mineral deposits. The investigation of the water supply in placer districts covered an area of approximately 6,500 square miles, and included 69 gauging stations maintained and 429 measurements of stream volumes. Fifteen of the 30 mining districts of Alaska which are being developed were visited by members of the staff.

The subdivisional survey of public lands in Alaska was begun. The work accomplished in the short season after the appropriation became available included two astronomical determinations of latitude, longitude, and azimuth, measurement of a base line and establishment of a system of triangulation, the survey of 108 miles of meridian and base lines and township extensions, with some section lines.

During the fiscal year the work of the Mineral Resources Division consisted of the preparation of reports on mineral resources of the United States for the calendar years 1909 and 1910. The statistics for 1909 were collected in cooperation with the Bureau of the Census. The field work of collecting the statistics was done by the Bureau of the Census through personal visits of a large force of agents, and it was thought that this plan would greatly expedite the work. Experience showed, however, that it took very much longer to get the data in this way than it would have taken by correspondence, the usual method pursued by the Survey.

Topographic Branch.—The total new area topographically mapped was 23,272 square miles, making the total area to date in the United States 1,131,037 square miles, or about 37 per cent of the entire country. In addition 6,460 square miles of revision or resurvey were completed, making the total area of actual surveys for the season 29,732 square miles. Topographic surveys were also carried on in Hawaii, the area mapped during the fiscal year being 224 square miles. The field force included 145 geographers and topographers with 68 temporary technical assistants.

Water Resources Branch.—The increase of $50,000 in the appropriation for investigations of water resources permitted a considerable extension of this work during the fiscal year, although it was necessary, in order to perform important public-land classification work, to allot 82 per cent of the total appropriation for work west of the one-hundredth meridian. The investigation of water-power sites, rights of way, etc., on the public lands was first performed by the engineers of the division of surface waters in connection with their measurements of stream flow. This is now assigned to a new division of water utilization.

At the end of the year the total number of stream-gauging stations maintained was 1,105. In addition to the foregoing, records ready for publication were received at the end of the year from private parties for about 100 stations. Underground waters were studied in California, Arizona, and New Mexico.

Examinations under the Weeks Act.—The act approved March 1, 1911, which provides for the acquisition of land for the purpose of conserving the navigability of navigable streams, imposed a new duty on the Geological Survey. Section 6 of the law provides for an examination by the Geological Survey of land whose purchase is under consideration and the submission of a report based thereon to the Secretary of Agriculture "showing that the control of such lands will promote or protect the navigation of streams on whose watersheds they lie."

This work was prosecuted in Georgia, Tennessee, and New Hampshire in May and June, resulting in the submission of reports favoring the acquisition of lands in two localities before the end of the fiscal year. These reports covered tracts in Fannin and Union Counties, Georgia, and in Blount and Sevier Counties, Tennessee, comprising 31,377 and 58,213 acres, respectively.

Publications Branch.—The Survey's success in reaching the public with the results of its scientific work may be measured by the distribution of its publications. In spite of the organization of the Bureau of Mines and the consequent elimination of its popular bulletins from the Survey's publications, the total number of reports and maps distributed by the Geological Survey in 1911 was

1,208,797, an increase of 6 per cent over the corresponding figures for 1910. An even larger percentage of increase is shown in the number of letters received containing remittances for such publications as are sold, while the receipts for topographic maps increased about 10 per cent. The total distribution of topographic maps, which includes congressional distribution, exchanges, and issue for departmental use, as well as the half million maps sold, increased 15 per cent. The total distribution to the public of books and maps is equivalent to more than 99 per cent of the number of copies received during the year from the Government Printing Office and the Survey's engraving and printing division. The total publications included 136 volumes, 91 topographic maps, and 5 geologic folios.

Administrative Branch.—The mails showed increases over the business of the preceding year. The roll of Survey members holding secretarial appointments numbered at the close of the fiscal year 862 persons, compared with 958 the year before. The principal change was the transfer of employees to the Bureau of Standards and the Bureau of Mines at the beginning of the year. The Survey library now contains 86,000 books, 100,000 pamphlets, and about 100,000 maps, and the collection is restricted to publications bearing upon the scientific work of the Bureau.

RECLAMATION SERVICE.

The act of Congress approved June 17, 1902, known as the "reclamation act," set apart as a fund for the reclamation of arid lands all moneys received from the sale of public lands in certain of the Western States and Territories, excepting the 5 per cent of the proceeds of such sales set aside by law for educational and other purposes. The actual receipts from this source to June 30, 1910, were $65,584,801.32, and the estimated total receipts to June 30, 1911, including $213,998.57 from sale of town-site lots, are $71,717,990.16. The net investment of this fund in reclamation works on June 30, 1911, amounted to $60,940,834.08.

The act requires the Secretary of the Interior to determine and return to the reclamation fund the estimated cost of construction, and entrymen and private landowners receiving water from reclamation projects are therefore required to contribute their proportion of the cost of construction, operation, and maintenance of the project wherein their lands are situated. The cash receipts from this source to June 30, 1911, were:

Cash returns to reclamation fund to June 30, 1911.

Water-right building charges	$1,533,175.63
Water-right operation and maintenance charges	517,393.85
Total	2,050,569.48

In addition, sales of water to towns and cities, leases of power developed in projects, rentals for irrigating water, miscellaneous services and sales, etc., have produced an additional revenue of $3,288,719.07, which, under the respective laws authorizing these transactions, is credited as a reduction of the cost of the projects from whence the receipts are derived.

No new projects have been undertaken since March 4, 1909, but prior to that date 32 primary projects had been undertaken, the net investment in which on June 30, 1911, amounted to $59,989,158.46, as is shown in the following table:

Net investment in reclamation projects to June 30, 1911.

State and project.	Net investment.
Arizona: Salt River	$9,164,437.56
Arizona-California:	
Colorado River	43,659.73
Yuma	4,313,868.21
California: Orland	499,004.53
Colorado:	
Grand Valley	83,683.71
Uncompahgre	4,509,697.63
Idaho:	
Boise	4,515,525.06
Minidoka	3,741,216.57
Kansas: Garden City	380,030.09
Montana:	
Huntley	853,472.76
Milk River	911,487.99
Sun River	768,493.35
Lower Yellowstone	2,922,442.00
Nebraska-Wyoming: North Platte	5,130,965.75
Nevada: Truckee-Carson	4,103,346.71
New Mexico:	
Carlsbad	571,181.37
Hondo	349,212.20
New Mexico-Texas: Rio Grande	290,746.75
North Dakota: Missouri River pumping	845,474.73
Oklahoma: Cimarron	8,873.17
Oregon:	
Central Oregon	40,416.67
Umatilla	1,206,391.31
Oregon-California: Kalmath	1,812,476.07
South Dakota: Bellefourche	2,683,345.04
Utah: Strawberry Valley	1,214,411.90
Washington:	
Okanogan	539,866.49
Yakima	4,905,181.83
Wyoming: Shoshone	3,580,249.28
Total	59,989,158.46

In addition, there had been invested in secondary projects, June 30, 1911, $586,988.94; in town-site development, $12,997.05; in Indian irrigation (reimbursable), $317,392.23; and for general expenses, $34,297.40, making a grand total of $60,940,834.08. In view of the immense areas of land included, the magnitude and expense of the engineering work necessary to provide for their reclamation, and of the importance to the waiting settler and land-owner that water be applied to the land and reclamation effected as soon as possible, the efforts of the Department have been directed toward the completion of projects already undertaken rather than the search for or undertaking of new projects. The following table contains a summary of the results of the reclamation work from June 30, 1902, to June 30, 1911:

Summary of results of reclamation work, June 30, 1902, to June 30, 1911.

Material excavated	cubic yards..		77,148,712
Class 1	cubic yards..	67,658,616	
Class 2	do....	5,136,331	
Class 3	do....	4,353,765	
Volume of storage dams	cubic yards..		7,192,787
Volume of dikes	do....		3,338,532
Available reservoir capacity	acre feet..		4,747,770
Number of tunnels			68
Aggregate length of tunnels	feet..		101,365
Canals carrying less than 50 second-feet	miles..		4,341
Canals carrying from 50 to 300 second-feet	do....		942
Canals carrying from 300 to 800 second-feet	do....		387
Canals carrying more than 800 second-feet	do....		291
Canal structures costing less than $500			22,226
Canal structures costing from $500 to $2,000			847
Canal structures costing over $2,000			529
Number of bridges			2,223
Aggregate length of bridges	feet..		47,310
Riprap	cubic yards..		336,056
Paving	square yards..		344,891
Cement used	barrels..		1,245,827
Concrete	cubic yards..		1,066,310
Roads	miles..		570
Telephone lines	do....		1,694
Telephones in use			724
Buildings erected			548
Offices		65	
Residences		258	
Barns and storehouses		225	
Area of lands for which water can be supplied	acres..		1,025,609
Acreage included in projects now under way			3,101,450

BUREAU OF MINES.

The Bureau of Mines was established by an act of Congress approved May 16, 1910 (36 Stat., 369), and effective July 1, 1910. Its main object is to aid in lessening the loss of life and waste of resources in the mining, quarrying, metallurgical, and other mineral industries of the country. The enabling act not only outlined the Bureau's duties, but transferred to it from the Geological Survey the work of analyzing and testing coals, lignites, and other mineral fuel substances, and investigating the causes of and means of preventing mine explosions. The headquarters of the Bureau were established in Washington, D. C., on Eighth and G Streets Northwest. Its director was appointed September 3, 1910.

The investigative work of the Bureau during this first year of its existence has related mainly to two subjects: The study of fuels belonging to or used by the Government and inquiry into the causes and means of prevention of mine accidents. The first of these, for which Congress made an appropriation of $100,000, has had to do primarily with the purchase, for the use of the Government, of coal, aggregating in cost about $8,000,000; the most efficient methods of using this coal at the various heating, power, and lighting plants of the Government and on board Government ships; and the safest and most efficient methods of storing coal at naval stations, army posts, etc. In addition to the large number of furnace-fuel tests that this work involved, more than 10,000 samples of coal were analyzed in the laboratories of the Bureau. Investigations relating both to the efficient storage of coal and to the causes and prevention of spontaneous combustion of coal stored in bins or in the bunkers of ships have been conducted by the Bureau in the navy yards at Key West, Norfolk, and Portsmouth and on the Isthmus of Panama. The fuel investigations have also included the testing and analyzing of a large number of samples of fuel oil and the preparation of specifications for use by the Government in the purchase of both oil and coal for fuel purposes.

The investigations into the causes and means of prevention of mine accidents have been extended as rapidly as circumstances would permit, but so far have not progressed to the needs of the coal-mining industry. Their chief aim has been to determine the causes of mine explosions; to make safer the use of explosives and electricity in mines; and to reduce the risks through falls of roof, the use of open lights, and other mining conditions.

In carrying on these investigations the engineers of the Bureau have used every variety of laboratory equipment available; they have examined the coal mines in many parts of the United States; and they have opened near Pittsburgh, Pennsylvania, a small mine, where experiments are conducted to determine, under working conditions, how gas and dust explosions are caused and how such explosions may be prevented.

Early in the examinations of mine disasters it was found necessary to provide in the different important coal fields facilities for use by the engineers of the Bureau in entering mines in which disasters had occurred while these mines were still full of poisonous explosive gases, in order that the examinations might be made while the evidences of the disaster were still fresh. Such prompt examinations are also useful in rescuing entombed miners. To meet this immediate need, and with a view to the development of future agencies, there have been established by the Bureau six mine-rescue or mine-safety stations, one each at Pittsburgh, Pennsylvania; Knoxville, Tennessee; Birmingham, Alabama; McAlester, Oklahoma; Urbana, Illinois; and Seattle, Washington. There have also been purchased seven mine-safety cars, which have been equipped as far as practicable with mine-rescue and fire-fighting apparatus. These seven cars have headquarters as follows: One each at Billings, Montana; Trinidad, Colorado; Evansville, Indiana; Huntington, West Virginia; Pittsburgh, Pennsylvania; and Wilkes-Barre, Pennsylvania; and one at Rock Springs, Wyoming, and Salt Lake City, Utah. Each one of these cars has been moving from point to point, carrying a mining engineer and two experienced miners.

With a view to recommending proper regulations to prevent accidents in American mining, quarrying, metallurgical, and other mineral industries, it has been necessary to make a study of the laws, rules, and regulations existing for this purpose in other important mining countries. This work is now well under way.

Notwithstanding the newness of the work and the many preliminary difficulties in the way, the progress made in behalf of greater safety in mining has been gratifying. The Bureau is gradually winning the hearty cooperation of mine workers, mine owners, State mine inspectors, and manufacturers of explosives and mine equipment. In coal mines black powder is rapidly giving place to safer explosives; safety lamps and other appliances are being increasingly used; improvements in electrical installations are under investigation; mine explosions are being better understood and are becoming less frequent; mine safety demonstrations, in connection with the work of the stations and cars, have been witnessed and participated in by more than 100,000 miners; over 14,000 miners have received some training in rescue and first-aid methods; and more than 500 sets of mine rescue equipment have been installed at the larger coal mines located in different parts of the country.

There are some urgent needs in connection with the continuance and extension of this work. Two or three additional mine safety cars are needed, and the work of all the cars should be continued throughout the entire year. The investigations looking to the prevention of accidents should be extended to include metal mines, quarries, and metallurgical plants. There are 1,500,000 men associated with these hazardous occupations who need to be reached and enlisted in this movement for greater safety, and there should be no unnecessary delays in doing this. The testing of explosives, the fees from which go to the miscellaneous receipts of the Treasury, should be more adequately provided for, in order that such testing may be kept current. The statistical data concerning accidents in the mining, quarrying, and metallurgical industries have been far from complete in the past, and there have always been serious delays in their collection and publication. In many parts of the country no such statistics are collected, but the assembling of the data is essential to the formulation of intelligent plans for preventing mine accidents. There is, therefore, serious need that the Bureau of Mines be empowered to collect and publish statistical data with a degree of thoroughness commensurate with the importance of the subject.

There is also serious need for the enlargement of the work of the Bureau to include a thorough investigation into various branches of the mining industry, with a view to lessening the waste of essential mineral resources. Such investigations would unquestionably prove beneficial to the country. The results of carefully conducted inquiries show that the present losses in coal mining approximate 250,000,000 tons of coal per annum; and that the waste in metal mining and metallurgical industries ranges from 10 to 50 per cent of the total possible production. This waste of mineral products—many of them destroyed or lost beyond the possibility of future recovery—means a serious drain on the Nation's supply. In dealing with mineral resources, in contrast to rainfall, forests, or agricultural products, it should be understood that of mineral wealth the Nation has only one supply, which, when exhausted, it can not replace.

The buildings and grounds at Pittsburgh now occupied by the Bureau of Mines for its investigations are inadequate for its needs, unsuited to its purposes, and are held subject to the wishes and needs of another department of the Government. This situation should be remedied in a manner commensurate with the importance of the work that the Bureau is required to do.

OFFICE OF INDIAN AFFAIRS.

The Indians in the United States number slightly more than 323,000, of whom about one-third are members of the Five Civilized Tribes in Oklahoma. All are in process of absorption with the general mass of American citizenship. When the process is complete with respect to any individual Indian he will have lost his tribal status, received in severalty his share of the tribal property, and been freed of all restrictions in dealing with it. He then has the same status as any other citizen and the guardianship of the Federal Government over him is at an end.

The Indian Service is engaged in the work of helping the Indians to fit themselves for American citizenship and in preserving and developing their property until they are able to take full charge of it. This work calls for administrative business ability, knowledge of practical sociological movements, and effective sympathy. The personal interests under the care of the service are of the greatest importance and are mainly concerned with three subjects—health and morals, industrial training, and general education. The property interests involved are of great value and complexity, including lands allotted to the Indians in severalty and held by them under restrictions which in effect make the Government the guardian of the Indian. The unallotted Indian lands are in part agricultural and in part consist of undeveloped forests, minerals, water power, and other natural resources which involve the general social and legal problems presented by like resources on the public domain, together with peculiar difficulties due to the beneficial ownership of the Indians.

Health and morals.—The Indian Service is earnestly endeavoring to improve living conditions and to prevent disease among the Indians. More than 52 gatherings of Indians and service employees for instruction in hygienic living have been held during the past year, with an aggregate attendance of more than 10,000. Such subjects as ventilation, disposal of garbage, care of milk, water supply, the prevention of tuberculosis and trachoma are considered. The service is endeavoring whenever new buildings are erected to see that they are built in conformity with modern ideas of sanitation. Eighty-eight field matrons are employed to work among the homes of the Indians. Their work has proved very effective in reducing infant mortality, and in helping the children to sound health. Vigorous efforts are being made to stamp out existing disease. One hundred physicians give their whole time to schools and agencies, and are assisted by 60 physicians who are under contract to give a part of their time to attendance upon Indians. The four sanitoria for tubercular patients have been enlarged, and the hospital for trachoma at Phoenix, Arizona, continued. The urgent necessity for the health propaganda is patent from returns of the physicians; they report 961 deaths from tuberculosis under their notice, attendance upon over 16,000 cases of tuberculosis, and treatment of 7,400 cases of trachoma, a disease which three years ago was practically unrecognized.

In the past year 1,473 cases of persons charged with selling liquor to Indians, or introducing it into the Indian country, were disposed of. One thousand one hundred and sixty-eight convictions resulted, 265 dismissals, 6 disagreements of the jury, and there were but 34 acquittals. There is a steadily increasing tendency on the part of local authorities to assist the officers of the Government in the work of suppressing this liquor traffic.

Industry.—Industrially the Indians are making much progress, particularly in farming. Reports from all parts of the field show that Indians who had not cultivated land have begun to farm, that Indian farmers are extending the acreage they work, and that they are raising larger and more diversified crops than before. The commissioner reports that during the year Indians farming for themselves had under cultivation at least 700,000 acres of land. At 22 reservations demonstration farms were used that Indians might have practical illustration of what they can expect to do with their land. In the Southwest, experiments were conducted with the cooperation of the Bureau of Plant Industry of the Department of Agriculture, to determine the most satisfactory crops for Indian lands and to introduce profitable new crops,

Apart from farming, Indians all over the country are entering gradually into ordinary industrial activities. During the past year Indians in Arizona and New Mexico were paid wages amounting to $260,000. Two thousand of the 6,000 regular employees in the Indian Service are themselves Indians.

Education.—The work of the Indian schools is largely industrial. Each boy or girl spends half of each day in farming, in machine shops, in the barns, or in the laundry, sewing room, or kitchen. This plan is carried out not only at boarding schools, but also at the 223 day schools maintained. One of the results is that it usually takes an Indian child two years to do the class-room work of an ordinary school year, but it is believed that the increase in industrial knowledge more than compensates for this slowness. It has been so well demonstrated that in cases where the Indian is capable of being educated with white children he profits from contact with them, that the service has made every effort to increase the number of Indian children who get an education in white schools, and this past year showed more than 11,000 Indian children so educated. Careful investigation in the past year has shown that there are some 9,000 Indian children who are not as yet going to any school, but for whom the Indian Service is now trying to provide facilities. The total number of Indian children in schools of every character during the past year was about 39,800, showing an increase over the former year of about 2,000.

The approximate value of school and agency plants is $8,500,000. In the fiscal year a total of $785,000 was spent for repairs and new construction.

Property.—Allotment of Indian lands in severalty has continued. During the past year approximately 2,000,000 acres were allotted to 13,000 Indians.

The act of June 25, 1910 (36 Stat., 855), requiring the Secretary of the Interior to ascertain the heirs of deceased allottees and their competency has greatly increased the work of the Indian Office. Many allotments are now of 20 years' standing, and through difficulty in obtaining reliable testimony questions of fact have become hard to solve. During the year the heirs of 800 deceased allottees have been ascertained.

The question of the extent to which leases of allotments should be permitted involves difficult questions. Only for the relatively small class of allottees who are incapacitated for farming or other work is leasing advisable. During the year the sale of 340,000 acres was considered by the Indian Office, and 150,000 acres were sold for a total of almost $2,500,000, an average of $16 an acre.

There are some $10,000,000 on deposit in banks throughout the country to the credit of individual Indians, but only subject to disbursement under the supervision of the Indian Service. Able-bodied Indians who can get work are not allowed to use their money for ordinary expenses, but are liberally encouraged to use it for building houses, buying stock and farm implements, and generally improving their lands.

Protection of Indians against fraud.—Most of the long-pending suits to annul deeds of their allotted lands made by the Mexican Kickapoo were settled in the Indians' favor. Out of 75 allotments 69 are to be restored with mesne profits, and the Government will use its influence to secure the return of such consideration as the Indians had received. Similar settlements are expected in the remaining six cases.

Since the close of the fiscal year prosecutions in Seminole County, Oklahoma, for frauds against minor and full-blood Indians have resulted in the conviction of 5 of the 6 principal defendants and their sentence to the State pentientiary for terms of from 7 to 14 years, and recently 21 additional indictments were returned against 7 individuals. In McCurtain County, Oklahoma, concerted efforts by State, Federal, and tribal officials resulted in an investigation of probate matters that brought about the resignation of the county judge and the recovery for Indian minors of over 4,100 acres of land and about $65,000; furthermore, State officials have secured an agreement by which three of the largest purchasers are to submit to a special board of arbitration the titles to all lands acquired from Indian minors through the local probate court.

As the outcome of 207 suits involving town lots fraudulently acquired in the Creek Nation $85,000 have been recovered, together with 94 lots worth about $60,000. Twenty-five suits are still pending.

On the White Earth Reservation in Minnesota vigorous action has been taken to annul deeds unlawfully procured from full-blood and minor Indians and to punish the guilty persons. In the fiscal year 901 suits in equity were filed and the total number will be 1,086. Complete success in these suits will mean the recovery of 142,000 acres of land valued at over $2,000,000 and timber estimated to be worth $1,755,000 on behalf of more than 1,700 Indians, forming almost 34 per cent of the White Earth allottees.

Irrigation and drainage.—For the year 1911 Congress appropriated slightly in excess of $1,300,000, all but $259,000 of which was made reimbursable to the United States, for irrigating and draining Indian lands. In the State of Washington the Indian Service is very economically draining 30,000 acres of swamped land. In the course of new irrigation construction under this appropriation the Indian Service during the year provided facilities for irrigating about 25,000 acres and through the use of other funds it placed 7,300 acres under ditch. Furthermore, the Reclamation Service has had under construction for the Indian Service four extensive projects; the Pima project in Arizona, the Blackfeet, Flathead, and Fort Peck projects in Montana.

Altogether, more than 300,000 acres of Indian land have been placed under ditch at a cost of about $5,000,000. The bulk of the money appropriated by Congress for this irrigation is, under the various statutes, to be reimbursed when the lands are in successful cultivation. In constructing irrigation works, care is taken to employ Indian labor as much as is possible. Only a small portion of the acreage placed under ditch has as yet been cultivated by the Indians. There is need of persistent effort to persuade the Indians to use the irrigation facilities provided for them.

Timber.—The timber on Indian land is now estimated at 34 billion feet, worth approximately $76,000,000. The work of taking proper care of this timber and disposing of the mature trees is furnishing employment for a very considerable number of Indians, as well as increasing the revenue of various tribes and thus furnishing means for development of the Indian lands. In the past fiscal year no large sales were made. The two most extensive logging operations continued under contracts were at the Bad River Reservation, Wisconsin, where 84,000,000 feet were cut, yielding $503,000, and upon the ceded Chippewa lands in Minnesota, where 80,000,000 feet were cut, yielding $578,000.

The Neopit lumbering and milling project on the Menominee Reservation, in Wisconsin, for the first time showed a clear profit—$11,200; the total receipts from sales of manufactured lumber were $424,000. On an average 205 Menominees, slightly in excess of 38 per cent of the male members of the tribe over 18 years of age, were employed, together with 56 Indians of other tribes. Thus the project has become an important school of industry for the Indians.

FIVE CIVILIZED TRIBES.

Much progress has been made in the matter of closing out the tribal affairs of each of the Five Civilized Tribes. The work of enrollment of citizens and allotment of lands has been practically finished.

In the Cherokee Nation some deeds are yet to be delivered, and there remain small amounts of surplus lands which are now being offered for sale. There is also still pending litigation affecting the claims of some 5,600 newborn Cherokees, and another case involving the rights of about 1,720 freedmen who claim to be entitled to enrollment. Until these suits are disposed of it will be impossible to complete the closing out of the affairs of the Cherokee Nation.

In the Creek Nation there are also some deeds yet to be delivered and some surplus lands yet to be sold, which it is hoped to close out very shortly. Under the Creek agreement, each citizen was entitled to the allotment of land at the appraised value of $1,040. The land actually subject to allotment fell short of this valuation to the amount, in all, of $6,913,291. The funds and resources of the Creek Nation fall far short of this sum. It will therefore be impossible to close out the affairs of the Creek Nation until additional legislation can be had.

In the Choctaw and Chickasaw Nations, the distribution of funds to equalize allotments has been continued during the fiscal year. Beside the necessity for completing this, there are still four matters to be disposed of. There are 1,142,071 acres of unallotted lands not reserved or segregated which are now being offered for sale at public auction. There are 1,333,324 acres of land reserved from allotment on account of timber. The timber on this land has been reestimated and appraised, and regulations for offering the land and timber for sale at auction are now almost completed. There are also 445,000 acres of segregated coal and asphalt lands in the Choctaw and Chickasaw Nations, considerable portions of which are under coal and asphalt leases. The nations are anxious to have these lands disposed of so that the proceeds may be divided. On this subject the Department has made reports to you and to Congress. Nothing can be done by the Department until appropriate legislation is enacted There have also been reserved from allotment about 16 sections of matured timber. These lands have been repeatedly offered for sale, but no bid has ever been received equal to the appraised value. If the lands are to be disposed of, apparently either lower bids must be accepted or the Department must be authorized to sell the lands upon credit.

The establishment of district agents to assist in handling the affairs of restricted members of the Five Civilized Tribes has proven of the greatest benefit both to the Indians concerned and to the Department. The work of these agents has made it possible for the Department to perform its work both more efficiently and more promptly, and I believe that the questions affecting individual Indians are now being thoroughly well handled.

More than 20,000 suits brought to set aside conveyances of allotted land on the ground that the Indians were incompetent to convey are still pending, awaiting the decision of a case in the United States Supreme Court, which has been submitted and which it is expected will soon be decided. In the meanwhile, however, equitable settlements have been reached in a large number of such cases, and the work of settling is steadily progressing.

A great deal of work has been done, largely with the aid of the district agents, in protecting the rights of minor Indians who have suffered from negligent and, in some cases, dishonest guardians. Much land and large sums of money have already been recovered.

PENSION OFFICE.

At the beginning of the fiscal year ended June 30, 1911, there were 921,083 pensioners on the roll. There were added thereto during the year 26,200, made up of original allowances, restorations, and renewals. There were dropped therefrom 55,185, occasioned by death, remarriage, minors attaining the age of 16 years, failure to claim for three years, and all other causes, making a net reduction in the roll of 28 985, and leaving the total number on the roll at the close of the year of all classes 892,098, of whom 570,050 were soldiers and sailors, 321,642 were widows and dependents, and 406 were Army nurses.

The unexpended balances of the appropriations at the close of the fiscal year covered into the Treasury were as follows:

For pensions	$182, 199. 39
For medical examinations	43, 234. 67
For salaries and clerk hire, pension agencies	15, 492. 85
For rent and contingent expenses	10, 027. 98
For inspection of agencies	1, 331. 05
For salaries, Bureau of Pensions	16, 430. 04
For salaries, per diem, and expenses of special examiners	22, 780. 66
Total	291, 496. 64

The amount expended for pensions during the year was $157,325,160.35, a decrease as compared with the previous year of $2,648,895.73. The cost of administration in connection with the adjudication of claims and the payment of pensions was $2,517,127.06, a reduction in the running expenses of the Bureau and agencies in one year of $140 546.80. This is the smallest amount paid in any one year for such administration for 29 years.

The appropriations for the current expenses of the Bureau of Pensions and agencies for the fiscal year 1912 show a reduction of $629,650 as compared with similar appropriations for 1909.

There was disbursed for pensions from July 1, 1790, to June 30, 1865, $96,445,444.23. From July 1, 1865, to June 30, 1911, the total disbursements for pensions were $4,133,936,285.93. The expenses and cost of maintenance for the same period were $120,879,861.74, making a total of disbursements since July 1, 1865, of $4,254,816,147.67.

At the beginning of the year the number of applications pending of all kinds was 47,295. At the close of the year there were pending 36,793 applications, exclusive of a large number placed in the abandoned files. The total number of applications filed during the year was 120,814. There were admitted during the year 92,274 claims; rejected, 30,980; adjudicated where no benefits were derived other than those rejected, 1,065; making the total number of claims of all classes adjudicated 124,319.

Allowances of accrued pension were made in 20,618 cases, being issues for payment in cases of deceased pensioners from date of last payment to date of death.

There have been granted since 1861 by special acts 35,987 pensions, of which number 22,323 are now on the roll with an annual face value of $6,611,357. Only a part of this amount, however, is properly chargeable to special acts, as most of the beneficiaries had been previously pensioned under the general laws at lower rates. During the third session of the Sixty-first Congress 3,586 persons were included in special acts.

The largest number of pensioners on the roll at the close of any fiscal year was on June 30, 1902, when the total was 999,446. There has been a net decrease of more than 100,000 in the last six years, and the number is now less than at any time since 1892.

Since the passage of the act of March 3, 1899, providing for division of pensions of resident pensioners of the United States who shall desert their wives or minor childern, or who are inmates of National or State soldiers' and sailors' homes, 13,423 claims have been filed thereunder, 7,209 of which have been allowed and 5,987 rejected, leaving 227 pending.

Three bounty land warrants were issued during the year, granting 480 acres of land. The total number of such warrants issued to the close of the fiscal year 1911 is 598,685, granting 68,791,550 acres.

On June 30, 1911, there were also pending 1,427 claims for expenses of last sickness and burial of deceased pensioners. There were disposed of during the year 7,574 claims, of which number 5,808 were allowed, 1,166 disallowed, and 600 abandoned.

There were 59 new cases presented to the Department of Justice on account of offenses against the pension laws, and indictments found in 57 cases. There were 53 cases brought to trial during the year, in 51 of which convictions were secured. Only three of these cases were against persons who had rendered military or naval service. At the close of the year there were 109 cases pending in the hands of United States attorneys. Two civil suits were instituted; one was disposed of and a judgment for $538.54 obtained, and one dismissed by reason of a heavy fine being imposed upon the defendant in a criminal case. There was recovered $2,407.94.

As a matter of historical interest it is noted that the last pensioner of the Revolutionary War died during the past year. The last surviving pensioned soldier of that war died in 1869, and the last widow pensioner of that war died in 1906. The last surviving pensioned soldier of the War of 1812 died in 1905. There are now 279 widows of that war on the roll.

The law now requires each pensioner to present a voucher to the pension agent, executed after the pension has become due, before a check may be issued in payment thereof. This system is very expensive to the Government as well as to the pensioner. The Commissioner of Pensions, in response to a provision contained in the last appropriation act directing him to formulate a simplified plan for the payment of pensions, recommends that discretionary authority shall be granted whereby pensions may be paid without vouchers. The plan recommended provides for payment by check mailed to the last-known address of the payee. Postmasters are to be required to return the check for cancellation if the pensioner has died or remarried if a widow. The unpaid pension to the date of death of the pensioner will then be disposed of in accordance with the law, which provides specifically for the payment of accrued pension. The plan also provides that postmasters shall be required to report promptly to the proper office the death of any pensioner or the remarriage if a widow, in order that checks may not be issued in such cases. The check to be used will contain a provision to the effect that it is void if the payee shall have died or remarried if a widow prior to date of issue. It will be payable only when personally indorsed in ink by the payee, in the presence of two responsible witnesses, who shall certify to the identity of the payee with the pensioner named in the check and pension certificate. The plan further provides a penalty for forgery in the indorsement of the check, receiving payment of check upon a forged indorsement, or receiving payment of pension for any period subsequent to reenlistment, remarriage, or termination of period of dependence.

Under the plan proposed checks would be prepared and ready for mailing on the 4th of the payment month, many pensioners receiving their checks on that date. The pensioners will be saved the expense of the execution of pension vouchers and the delay often due to the return of faulty vouchers for correction. It is estimated that the cost to the pensioners in the execution of their vouchers is nearly $1,000,000 per annum.

The plan proposed will save to the Government the expense of printing, preparing, and mailing about 4,000,000 vouchers and the furnishing of 4,000,000 envelopes each year in which to return the vouchers for payment.

The Government will likewise be saved the expense of employing a large number of temporary clerks at the agencies during each quarterly payment.

The plan recommended by the commissioner shows that great care has been observed in working out the details to insure its successful operation. As it is shown to be along the line of economy and efficiency in the public service and will undoubtedly be greatly to the advantage of the pensioners, the same meets with my most hearty approval.

APPEALS IN PENSION AND BOUNTY LAND CLAIMS.

The number of appeals and motions for reconsideration pending at the beginning of the fiscal year July 1, 1910, and those filed during the year, their disposition, and the number pending July 1, 1911, is shown by the following table:

	Pending July 1, 1910.	Filed during the year.	Reinstated.	Total.	Disposed of.	Pending July 1, 1911.
Original merit appeals	233	3,211	1	3,445	2,915	530
Fee appeals	4	43		47	46	1
Motion for reconsideration		78		78	77	1
Total	237	3,332	1	3,570	3,038	532

In 186 cases the Pension Office was reversed, and in 118 cases the Commissioner of Pensions reported that upon reconsideration the adverse action taken by the Bureau was receded from and asked permission to allow appellants' contention. The Department, after considering such cases, decided that the action proposed by the Bureau was warranted under the law and the evidence, and the papers therein were returned to the Bureau for final action and favorable adjudication. There were also during the year returned to the Bureau for further action and report 118 cases for the reason that upon review it was found that additional and material evidence had been filed which had not been considered by the Bureau, or that a special examination or another medical examination was thought necessary, or for various reasons the claims had not been properly adjudicated. At the close of the year there were 12 of such cases pending, which are included in the total number of pending appeals as shown by the table.

Although tnere is a material increase in the number of appeals left pending and undisposed of at the end of the last fiscal year, and the total number finally disposed of by the board during the fiscal year ended June 30, 1910, largely exceeded the total number disposed of during the last fiscal year, this is fully accounted for by the reduction of the working force of the board and a comparison shows that the average number of cases disposed of per member during the last year was greater than during the preceding year.

The provisions of the legislative, executive, and judicial appropriation act, approved March 4, 1911, having abolished the Board of Pension Appeals and transferred the duties theretofore performed by it to the office of the Assistant Attorney General for the Department of the Interior, the present report shows the final work of the board and the termination of its labors.

The figures shown by the foregoing tabulated statements demonstrate that the rapid falling off in the number of pension cases presented to the Department on appeal which was anticipated when the legislation above referred to was enacted has not been realized, and the fact that there has been a steady increase during the past year in the number of cases left pending and undisposed of at the close of each month, and a gradual falling behind in the docket notwithstanding the individual output of work by the members and employees of the board has markedly increased, would suggest that this work can not be successfully accomplished with less than the present working force.

I would, therefore, recommend that the Board of Pension Appeals be reestablished at the earliest possible date with at least the same working force provided for said board by the appropriation act for the fiscal year ended June 30, 1911. Provision might be made, as heretofore, that any vacancies occurring on the board by death, resignation, or otherwise should not be filled, thereby anticipating the decrease in the number of appeals taken that may be expected in a few years.

PATENT OFFICE.

During the fiscal year ended June 30, 1911, there were received 65,154 applications for mechanical patents, 1,315 applications for designs, 206 applications for reissues, 6,857 applications for trade-marks, 879 applications for labels, and 266 applications for prints. There were 34,428 patents granted, including reissues and designs, and 3,791 trade-marks, 576 labels, and 181 prints were registered. The number of patents that expired was 22,546. The number of allowed applications which were by operation of law forfeited for nonpayment of the final fees was 7,098. The total receipts of the office were $1,987,778.58; the total expenditures were $1,957,001.85; and the net surplus of receipts over expenditures was $30,776.73. The total net surplus for all years of receipts over expenditures of all kinds (including salaries of the force) is now $7,029,004.73. This surplus covered into the Treasury represents the net earnings of the Bureau, and it has all been paid by the inventors.

The commissioner calls attention to the great need for legislation providing for the elimination of one of the appeals within the Patent Office. The commissioner states that, under the present law, appeals are considered twice by the tribunals within the office, which is not only a duplication of work, thereby causing great delay in the prosecution of applications, but an additional and unnecessary burden of expense to inventors in the matter of appeals and attorneys' fees.

He also recommends legislation requiring the filing of photographic copies of drawings to accompany applications for patents for the purpose of more fully safeguarding the records of the office from unauthorized changes and reducing the chances of attempted fraud during the prosecution of the application.

I concur in the commissioner's recommendation for legislation to authorize him to issue certificates of correction in certain cases where mistakes have been made by the office or by the Public Printer; also for provision by law that applications shall be completed and prepared for examination within six months after filing of the application.

The commissioner urgently recommends that provision be made for more room for housing the United States Patent Office. The present structure is not fireproof and is filled with tons of inflammable material, comprising the secret archives of the office, which, if destroyed, would work untold damage to the commercial interests of the country. The District of Columbia fire department officials have pronounced the building unsafe as to fire, and the engineers of the War Department have said that the walls should be lightened of their load.

The commissioner suggests that a suitable building be rented for the Patent Office, to be used until the present building could be thoroughly remodeled, and if thought desirable when that is done the bureaus which are now in rented quarters, such as the Geological Survey, the Reclamation Service, and the Bureau of Mines, could be housed in the remodeled present building and a new building erected to accommodate the annually increasing force and volume of business of the Patent Office while that bureau was occupying temporary quarters. He urges that the Patent Office be given immediate and special relief and that part, at least, of the $7,000,000 in excess of the expenditures of the Patent Office be used to furnish larger and better quarters, with modern facilities for the force, which would then be in a position to accomplish the best possible results in the work for which the inventors pay the total cost.

BUREAU OF EDUCATION.

We have no national system of education. The several States have their own systems, and it has been and is the policy of the Federal Government not to interfere in any way with their schools, public or private; but it has been just as clearly its policy to foster education in all the States, not only by appropriations of money and lands, but in other ways not contrary to the accepted theory of the relation of the Federal and State Governments. For this purpose nearly half a century ago the Bureau of Education was established and attached to the Department of the Interior for the purpose of "collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories and of diffusing such information respecting the organization and management of schools and school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country." From year to year this Bureau has published statistical reports and many valuable studies of various problems of education, by the help of which school officers and teachers in each of the States have been enabled to know the progress of education in other States and throughout the world, and legislatures have been able to consider educational measures in the light of the experience of other States and the world at large.

Much more than half the children in the United States live under rural conditions in small towns, villages, and open country. All their education must be had in the rural schools. While the schools in the great cities are constantly the subject of study, there is no means of studying the comparative methods and development of rural schools in different communities except through the Bureau of Education. I believe the work of the Bureau should, therefore, be especially directed to this end, and that it should be afforded men and means sufficient to enable it to make such study of the needs of rural schools as will be a help to all parts of the country. The problems of the rural school are admitted to be the most difficult of all school problems, but this Bureau has in the past been able to give very little direct help toward this solution. There is great need in the Bureau for a comparatively large group of competent men and women giving their entire time and energies to these problems, with freedom, under the direction of the commissioner, to study them directly or indirectly wherever they can be studied to best advantage, prepare bulletins on the various phases of these problems for the general information of the people, to cooperate with national, State, and local committees constituted for their study by governments and various organizations and societies, and to go to any part of the country to give direct and specific assistance whenever needed. Such a division in the Bureau might in a very few years add much to the effectiveness of all country schools.

Over all the world the demand for industrial or vocational education is growing. In this country teachers and laymen in urban and rural communities alike are demanding that the schools shall do something to prepare the masses of boys and girls for effective service in some industrial occupation, fit them to make a living, and to contribute their part to the Commonwealth. How this shall be done and in what kind of schools is still uncertain. Experiments of many kinds have been tried in many places. Much money has been spent on these experiments and much more will be spent more or less wisely.

I believe the Bureau of Education can render very valuable service in this connection, and for that purpose it should have a group of competent specialists and assistants to study the various phases of the problem; bring together and digest the work and reports of societies, committees, and commissions; help toward the formulation of fundamental principles; and assist State, city, and county boards of supervisors in working out their practical application.

Twenty million or more children and young people in the United States spend a good portion of their time in school every year. The indoor sedentary life required by the work and discipline of the school is more or less unnatural for childhood and youth, and unless the conditions under which the school work is done are intelligently controlled there is constant danger that the health of the pupils may be injured, their vitality lowered, and their happiness and their value as citizens diminished. The country is fundamentally concerned in the health of its future citizens and should give to it no less attention than it gives to its live stock. To this end the Division of School Hygiene and Sanitation recently established in the Bureau of Education should be strengthened by the addition of a sufficient number of competent assistants and clerks to enable it to do its work effectively, studying principles of school sanitation, working out plans for their application, awakening interest in the subject among school officers, teachers, and patrons throughout the country, and assisting them in the care and health of the children in the schools.

The increase of the interest throughout the country in secondary and higher education has been greater even than in elementary education. Appropriations for colleges, universities, technical schools, and normal schools for the training of teachers have increased nearly 200 per cent in the past decade, and the increase in appropriations for the agricultural and mechanical colleges has been still larger. With this increase in interest and expenditures has come an increase in demands on the Division of Higher Education in this Bureau, and it should be strengthened immediately by the addition of specialists in normal-school education for the training of teachers. There is particular need for a specialist in agricultural education, who may give his time to the agricultural and mechanical colleges for negroes in the Southern States and help them to a better use of the funds they receive from the Government. Because of lack of some such intelligent supervision and help many of these schools are failing to accomplish the full purpose for which the Federal funds are appropriated.

Because of the peculiar nature of the work which this Bureau has to do it is especially important that the Commissioner of Education and the heads of the various divisions should be enabled to visit schools in all parts of the country, attend meetings of educational associations, confer with school officers and teachers, and make the Bureau more directly useful. For this purpose there should be liberal appropriations for traveling expenses, and an assistant commissioner should be provided to carry on the routine duties of the office during the absences of the commissioner.

The Bureau should be able to gather full and accurate statistics in regard to education and to publish them promptly. The recent increase in the number, size, and kinds of schools makes this a very difficult task and there is need of radical revision in the method of doing it. This can be done, it is believed, with little additional cost if the recommended enlargements in the Bureau are made.

The Bureau of Education now has one of the most valuable and complete libraries on education in the world, and it should be made more serviceable not only to the Bureau itself but also to students of education everywhere. To students and investigators in all phases of education it should become a chief source of information, and all of its material should be made easily accessible to them. For this purpose there should be employed a man well versed in the theory and practice of education, whose services would be at the disposal of such students and who might assist them in their studies and investigations.

During the year ended June 30, 1911, there were maintained 81 public schools for natives of Alaska, with an enrollment of 3,810 and an average daily attendance of 1,692. This average attendance is much lower than it should be. There is need of a law requiring the children of natives of Alaska between the ages of 6 and 15 to attend school at all times when the families of such children are in a village having a school. The appropriation for their education should be increased from $200,000 to $248,000, so that more attention may be given to instruction in sanitation and industries.

The experience of the Bureau of Education in endeavoring through its employees to furnish medical relief to the natives of Alaska demonstrated the desirability of authoritative study of the prevalence of disease among the natives of Alaska and of the means for its prevention. During the summer of 1911 Dr. Milton H. Foster, detailed from the Public Health and Marine-Hospital Service, made a thorough investigation of the sanitary conditions among the natives of southern Alaska. As the result of his investigations, Dr. Foster recommended the following measures, which require action on the part of Congress: (1) The establishment of a sanitarium for cases of pulmonary tuberculosis requiring hospital treatment; (2) the establishment of a home for destitute blind and crippled natives; (3) authority for the Surgeon General of the United States Public Health and Marine-Hospital Service to appoint one of the officers of that service to act as commissioner of public health for Alaska.

The reindeer in Alaska are being gradually turned over to the natives and they now own about 55 per cent of the total number, while the Government now owns only 14 per cent. Of the 42 herds, 36 are cared for entirely by natives, whose net income therefrom during the year 1909–10 was $24,656.09. During the past year 40 reindeer were delivered to the Department of Commerce and Labor for use in stocking St. Paul and St. George Islands in Bering Sea.

TERRITORIES.

For the purpose of centralizing information regarding the Territories, and, in so far as the law permits, to place their administration under the Department of the Interior, an order was issued by the President May 11, 1907, and subsequently amended to read as follows:

> It is hereby ordered that on and after May 1, 1909, all official communications or reports from and to executive officers of the Territories and territorial possessions of the United States, viz, Arizona, Hawaii, New Mexico, Porto Rico, Alaska, Samoa, and Guam, and all official communications or reports relating to territorial matters from and to all executive officers of the United States stationed in such Territories and territorial possessions shall be transmitted directly to the heads of the departments of the Government as provided by law, and in all cases where the acts of Congress do not specifically designate the department to which reports shall be transmitted the same shall be forwarded to the Secretary of the Interior in such manner and under such regulations as he may prescribe.

By Executive order dated July 15, 1909, Porto Rico was transferred to the Insular Bureau of the War Department.

ALASKA.

Conditions in Alaska call for immediate action by Congress. Its proper administration and development can not be accomplished under existing laws. These laws neither promote development nor protect the public interest. After a careful examination of official reports and other publications, and a personal visit to the Territory during the past summer, I had occasion to present the opinions thus formed before the American Mining Congress at Chicago on September 27, 1911. The general policy outlined in that address had been discussed with you and you have since given public approval to its specific recommendations. With some modifications and with a map of Alaska indicating its present mineral development this address has been reprinted as Bulletin 36 of the Bureau of Mines and has received such general publicity that I do not deem it necessary to restate in detail the views therein expressed. It is available for all those who are interested in its suggestions. I do wish, however, to urge with great earnestness the importance of immediate relief for Alaska in the following particulars:

First. The construction by the Federal Government of a central trunk-line railroad from tidewater to the Tanana and the Yukon.

Second. The passage of a liberal but carefully guarded leasing law for the development of its mineral resources, and especially of its coal lands.

Third. The reservation of a sufficient amount of these coal lands to provide for the future needs of the Navy, and the mining of this coal by the Government for this purpose.

Fourth. More liberal appropriations for aids to navigation, such as lights and buoys.

Fifth. More liberal appropriations for the construction of roads and trails.

Sixth. The adoption of a form of territorial government better adapted to its remote situation and peculiar local conditions.

In the address to which reference has been made the advantages of and the justification for a Government railroad in Alaska were fully discussed, and the opinion was expressed that the Government should take over and complete the construction of the so-called Alaska Central or Alaska Northern Railroad, leading from Seward, on Resurrection Bay, through the Matanuska coal field to the Tanana and the Yukon. Since then the official representatives of the present owners of this railroad have definitely stated their willingness to turn it over to the Federal Government at a fair valuation to be appropriately determined. The Department of Agriculture has also furnished a statement of the results of its experimental work at Rampart and at Fairbanks, showing the agricultural probabilities of these northerly portions of the Yukon and the Tanana Valleys. The letter containing this statement is reprinted as an exhibit to this report. The following quotation conservatively states the general conclusion reached:

> As a result of 10 years' active work this Department believes in the possibility of developing an agriculture for Alaska that will be comparable with that of northern Europe, where conditions are somewhat similar, such as in parts of Norway, Sweden, Finland, and Russia. It is believed that agriculture will supplement any other industry that may be developed in Alaska, and it is possible that ultimately oats and barley can be grown in sufficient quantity to supply not only local demands but a surplus for exportation. It is probable that stock raising can be made a success and dairying become profitable, as the period of winter feeding and protection is not much, if any, longer than is now required in many other regions where these industries are carried on.

The Secretary of the Navy states that there should be reserved in Alaska for the uses of the Navy for the next 50 years sufficient high-grade coal to supply an average of 400,000 tons a year. There are portions of both the Bering River and Matanuska fields from which the Geological Survey believes the high-grade coal needed for Navy use can be obtained. It is estimated that not less than 2,500 acres of this land should be reserved for this purpose, to be carefully selected after systematic prospecting and drilling.

Careful consideration of the provisions of an appropriate leasing law for the coal lands of Alaska is being continued through the Director of the Bureau of Mines, who is receiving the cordial and helpful cooperation of men of wide practical experience in the business of mining coal, with the view of suggesting such changes in or substitutes for bills on this subject which are now pending in Congress as may be found desirable. In this connection I invite attention to the following paragraph from Bulletin 36 of the Bureau of Mines:

> The statutes of Colorado, Montana, and Idaho provide for leasing State lands containing, stone, coal, coal oil, gas, or other mineral. Colorado and Montana require a minimum royalty of 10 cents a ton for coal mined on such land. Montana prohibits the sale of its coal lands but authorizes the lease of the surface for agricultural or grazing purposes. It also requires the locator of a mining claim for gold, silver, and other metals, at the expiration of one year from the date of the location, either to purchase the claim at $10 per acre or take a lease thereof at such price and upon such terms as may be agreed upon between him and the State Board of Land Commissioners. Idaho also authorizes leases of State land containing precious metals. Minnesota authorizes leases of State land containing iron ore. North Dakota provides for the leasing of coal lands at a royalty of 10 cents per ton. Oregon and Washington provide for leasing State lands containing gold, silver, lead, cinnabar, or other valuable minerals. Wyoming authorizes the State Land Board to lease on a royalty basis State or school lands supposed to contain coal, oil, or minerals, the royalty not to exceed 10 per cent of the gross output of mineral or oil, and not exceed 10 cents per ton for coal. Some of the States above noted limit the leases to five years with provision for renewal, some to 50 years, and some to a period to be fixed in the discretion of the State land officials.

The whole subject of the encouragement and regulation of ocean transportation between Alaska and the rest of the United States should be given careful consideration with a view to the prompt enactment of needed legislation and the appropriation of the necessary money. All doubt as to the jurisdiction of the Interstate Commerce Commission over this traffic, as well as over the railroads of Alaska, should be removed and the necessary steps should be taken to ensure adequate terminal facilities and the prevention of discrimination in their use. I call attention especially to the following quotation from the annual report of the governor of Alaska:

> Although more aids to navigation have been installed on the Alaska coast in the last few months than in the whole history of the Territory heretofore, the number of these aids, relatively to the great expanse of the coast line, is still woefully small. Since April, 1910, there have been installed 41 lights, 1 fog signal, and 18 buoys. The first number given, however, includes 4 oil lights which were converted from oil burners to acetylene gas burners. The adaptation of the acetylene light in recent years to the purpose of lighting waterways has proved to be a great boon and has revolutionized the estimates of cost for aids to navigation in Alaska. In many situations among the tortuous channels of the inland passages on the Alaska coast an acetylene lens lantern, which is inexpensive to build and to maintain, serves a better purpose than a costly lighthouse, requiring the constant services of resident keepers. No very large appropriation of money has been made for aids to navigation in Alaska, but the development of the acetylene apparatus has made it possible to accomplish a great deal in the last year and a half.
>
> There is a crying need, however, for several high-order lights to mark dangerous points where minor lights will not serve the purpose, and where it is necessary to have

fog signals as well as lights * * *. These lights will be expensive, but the lack of proper aids at those and many other points in Alaska has caused the wreck of many passenger and freight steamships. Thirteen steamers of large tonnage, all of them carrying passengers, have been wrecked on the routes between Puget Sound and Alaska in the last three years and a half. Seven have been wrecked in the first nine months of 1911. The establishment of proper aids to navigation is a matter of as large economic importance, probably, as any other project for the development of Alaska. It is not only imperative that the lives of thousands of passengers be protected by this means, but that valuable property be conserved; and, by making navigation less hazardous, the rates of marine insurance, and hence of transportation and cost of supplies, reduced. It is probable that the sum of $400,000 would defray the cost of every remaining lighthouse project in Alaska that has thus far been examined and approved by the Lighthouse Establishment. It is earnestly urged that appropriations at least four times as large as those made for the current year be authorized at the coming session of Congress.

To demonstrate the imperative need of additional roads and trails in Alaska, it is only necessary to call attention to the fact that, as reported in 1910, in a territory as large as one-fifth of the main body of the United States there had been constructed since the organization of the board of road commissioners for Alaska a total of only 759 miles of wagon roads, 507 miles of sled roads suitable for 2-horse sleds, 661 miles suitable for single horse or dog sleds, 85 miles of trail staked permanently, and approximately 1,170 miles of trails temporarily staked. The maintenance cost of even this small system makes serious inroads on the total funds available for the construction of roads and trails. The subject is one calling for special consideration in connection with any modification of the territorial government. If Alaska is to be developed, adequate provision must be made for these primary means of transportation. I believe that Federal aid should be continued and increased and indeed that the Federal Government should make liberal appropriations in addition to the revenues which can be derived from the Territory itself. The revenues derived from the leasing of its coal and other lands should be devoted to the development of the Territory after the necessary expenses of administration have been paid.

The fact that the Federal Government has heretofore made direct appropriation for the benefit of the Territory and that increased appropriations are needed constitutes one of the chief arguments against the extension of the principle of territorial independence and territorial responsibility to Alaska. Taken in consideration with the comparatively small and widely scattered population and the inadequate means for transportation and communication, it would seem to demonstrate that a commission form of government would best meet the existing situation. Such a commission could consist of appointed representatives of the Federal Government and locally elected representatives of the Territory itself. To it could be transferred under appropriate limitations the authority to make territorial laws and regulations such as are now sadly needed. Among these needs are some of the fundamental requisites of modern civilized society, such as the regulation of the public health, sanitation, and quarantine; the registration of marriages, births, and deaths; poor relief, compulsory school attendance; supervision of banking institutions, etc. The distance of the Territory from Washington and the constant demands of other affairs upon Congress make it practically certain that matters of this character will receive proper attention only from a local legislative body. The improvement of its transportation facilities, the development of its natural resources, and the increase of its population—all of which seem certain to follow the enactment of remedial legislation—will enable the Territory to furnish the revenues needed for its local government, and will then entitle it to the same measure of territorial independence which upon the same basis has been given to other territories.

The annual report of the governor gives an account of the progress of the Territory during the year. The population has remained practically stationary and is now slightly less than 65,000, about equally divided between whites and natives. The improvement of the natives has not been as rapid as could be desired, chiefly because they are exposed to the temptations of intoxicating liquor. The great extent to which municipal expenses are paid from funds arising from liquor licenses has added to the difficulties of restricting this traffic and illustrates the unsatisfactory manner in which the local government is now carried on. The assessment of property for taxation is restricted to the incorporated towns. Several of these made no assessment of taxable property and levied no taxes during the year. One or two have never done so. However, action taken by the governor during the year has resulted in holding 20 white "whisky peddlers" for the action of the grand jury under the law making the selling or giving of liquor to natives a felony. The appropriation of $12,000 for the enforcement of this law should be renewed, as it is beyond question that the sale of liquor to the Alaskan Indians, if continued, can not fail to destroy the race. From 3,500 to 4,000 natives have received substantial benefit from the action of the Government in 1892 in introducing reindeer, which now number about 35,000.

The Territory entirely lacks any adequate laws for the protection of public health. There is no provision for establishing quarantine to prevent the introduction or spread of contagious diseases except in the incorporated towns. In like manner there is no law to enforce any of the ordinary rules of sanitation. The result is disastrous to the natives and also a menace to the white population, chiefly on account of the communication to it of diseases prevalent among the natives. There is no law in the Territory for the registration of marriages, births, or deaths. Such records are important to the public and to the protection of property rights, especially of widows and orphans. Some general law should be passed upon the subject without waiting for any change in the form of territorial government.

The Government expends about $240,000 annually for education in Alaska, and in addition the incorporated towns expend for schools a considerable sum. The public schools outside of the incorporated towns have been administered by the governor's office more efficiently than hitherto. Better methods of accounting have been introduced and manual training departments have been established in some of the larger schools. The statutory limit of $1,000 for the construction of a school building is reported to be insufficient to cover the cost. The suggestion is made that the maximum should be raised to $2,500, so that buildings may be constructed at a cost varying from this maximum to $1,200, which is the smallest amount for which a suitable building can be constructed in any of the towns. To make the system effective the law should compel attendance. This is especially necessary for the native children, for whom there are about 80 schools, administered by the Bureau of Education through a general superintendent and four district superintendents in Alaska.

Alaska's greatest resources are her minerals, and in the development of these the precious metals still hold the predominant place. The shipments of domestic gold and silver to the States during the last fiscal year amounted to $15,171,008, a sum greater than the value of the shipments of other commodities combined, and but slightly less than the importation of merchandise into Alaska from the States. The statistics of commerce have shown an increase in the value of the shipments other than gold and silver from Alaska to the States. Canned salmon and copper ore were the items which increased most. The increase in the copper shipments was largely in the last three months of the fiscal year, because of the completion of the Copper River Railroad and a larger increase is to be expected. The coal used in Alaska for all purposes during the year was 116,000 tons. The prices on the coast have ranged from $10 a ton at Juneau to $21.30 at Nome. The inadequate laws, the pending contests on private entries, and the general withdrawal of the coal lands have combined to prevent the development of Alaskan coal. The coal used has been imported and less than one-third of it has come from the United States. In the interior, wood is the fuel in general use for all purposes, while on the coast oil is supplanting coal, and the railroads and steamship lines of Alaska and the interior Pacific coast are being equipped for this fuel, the supply for which is drawn from the California oil fields. The fishing industry stands second to mining in its productiveness. It employs upward to 15,000 persons, and $20,000,000 has been invested. The finished product had an export value of over $10,000,000, which is an increase of over

$2,000,000. The recent season was the most prosperous ever experienced, due chiefly to an increase in the prices of the product, although it is probable that the pack of canned salmon was the largest ever produced. The halibut fishery quadrupled its output in 1910 and more than quadrupled the price received for it, which that year was over $800,000. The statistics for the season of 1911 when completed are expected to show a still further increase.

Many changes in the laws and regulations are necessary for the encouragement and protection of the fisheries. The effective cooperation of Federal and local authorities for this purpose could be brought about by such a commission as has been suggested. The governor's report, however, calls attention to some changes which should be made immediately, such as prohibiting the taking of herring for the manufacture of fertilizer and oil; the regulation of the number of salmon canneries; the readjustment of taxes; the maintenance of public fish hatcheries, and the discontinuance of the system under which the maintenance of private hatcheries entitles the canning establishments to tax rebates. The governor also calls attention to the need of additional legislation for the better protection of the fur-bearing animals.

During the year $548,447 worth of lumber was shipped from the United States to Alaska, being about the same amount that has been shipped annually for the past five years. The record of timber cut from the national forests in Alaska during the past year shows over 28,000,000 board feet, for which approximately $30,000 was paid. Timber outside of the national forests is used for domestic and other local purposes and the regulations governing its use are now undergoing revision with a view to making this timber more readily available.

The report of the governor contains many other suggestions and discusses conditions in detail. It should receive careful consideration by Congress.

ARIZONA AND NEW MEXICO.

The time draws near when the governmental affairs of Arizona and New Mexico will have no place in the annual report of the Secretary of the Interior. Under the enabling act of Congress approved June 20, 1910 (36 Stat., 57), a convention was elected in each Territory and framed a State constitution, which was approved by a vote of the people in January, 1911. On August 21, 1911, the President approved a joint resolution (37 Stat., 39) authorizing him to issue his proclamation admitting Arizona and New Mexico into the Union on the following conditions:

That there should be submitted to and adopted by the voters of Arizona a substitute for Article VIII of the pending constitution excepting the judiciary from the operation of recall by popular vote.

In that event the Territory will be admitted to statehood upon the completion of the necessary formalities.

That there should be submitted to the electors of New Mexico for adoption or rejection a substitute for Article XIX of the pending constitution providing an easier method of amendment in the future. The governor reports that this substitute was adopted at an election held November 7, when State officers and Representatives in Congress were also voted for. The issuance of the President's proclamation awaits the due certification of the results of this election.

Both Territories have developed sufficiently to fully justify their admission into the Union. Arizona's population is estimated at 225,000, an increase of approximately 10 per cent since the census of 1910 was taken. That of New Mexico was 327,301 in 1910, and is now estimated at 340,000. The increase of population is especially notable in the irrigated valleys, and therefore indicates not only present but permanent stability and prosperity. The annual revenues of each Territory slightly exceed $1,000,000. The annual expenditures of Arizona are slightly in excess of, and those of New Mexico slightly less than, said sum. The assessed valuation of the taxable property of Arizona is $98,032,708.64 and that of New Mexico $60,048,880.75, an increase of $11,906,482.29 and $1,735,754.57, respectively, over 1910. The tax rate for each Territory is 10 mills, and the debt of each slightly less than $1,000,000.

HAWAII.

The jurisdiction of the Department of the Interior over Hawaii is exceedingly limited. While the governor and some other territorial officials are appointed by the President, the islands are largely self-governing, under authority and limitations contained in the acts of Congress. Under the joint resolution of July 7, 1898, providing for annexing the Hawaiian Islands to the United States, Congress provided that the existing laws of the United States relative to the public lands should not apply to such lands in the Hawaiian Islands, but that special laws for their management and disposition should be enacted by Congress. Certain changes were made by intermediate legislation, and in 1910 Congress, by the act of May 27 of that year, made many important changes in the laws relating to public lands in the Territory. It has been held by this Department that there is no appellate jurisdiction in the Secretary of the Interior respecting decisions of the territorial officers in regard to the public lands, and this Department has never been called upon to administer those laws. It has occasionally been asked for advice by the territorial authorities, and on one occasion an appeal was attempted but dismissed.

The annual report of the governor of Hawaii points out that imports and exports aggregated $69,451,163, which, although less by $2,173,796 than for the preceding year, was greater by $7,226,984 than the largest amount before that; they have increased 125 per cent in the 11 years of territorial government. The imports were $27,512,580, an increase of $2,374,333, and the exports $41,938,583, a decrease of $4,547,829. About 90.5 per cent of the trade was with the mainland of the United States, the imports from which have practically doubled within seven years. The inward tonnage was 1,343,876, an increase of 35,075, and the outward tonnage slightly greater. The tonnage has increased 40 per cent during territorial government. Nearly 95 per cent in value of the freight was carried in American bottoms. The customs receipts were $1,654,761.34, an increase of $79,442.19, and larger than for any preceding year; the total thus paid into the Federal Treasury since the organization of territorial government is $14,913,460.86. The internal-revenue receipts were $218,739.14, an increase of $19,606.63, and larger than for any preceding year; they have aggregated $956,204.32 during the period of territorial government.

The current receipts of the territorial government were $3,482,560.84, a decrease of $158,684.51. The disbursements, including payments to counties and transfers to special funds, were $3,584,517.61, an increase of $320,153.41. The net cash balances in all revenue accounts aggregated $1,101,051.72 at the close of the year, an increase of $287,449.60. The counties collected $267,275.56 for themselves in addition to $1,184,564.11 paid to them by the Territory. Thus the total public revenues, territorial and county, aggregated $3,749,836.40, of which $2,297,996.73 went to the Territory and $1,451,839.67 to the counties.

Bonds bearing 4 per cent interest were paid to the amount of $75,000, leaving at the close of the year a total bonded debt of $4,004,000, or 2.59 per cent of the assessed value of property. Such assessed value was $154,584,032, an increase of $4,315,565. There are no county bonds.

Bank deposits at the close of the year were $15,310,263.51, an increase of $1,985,957.97; 5 new banks were established. The capitalization of domestic corporations was $156,873,028, an increase of $4,837,503; 51 new corporations were created and 7 old ones dissolved.

The population of the Territory is 191,909, an increase of 37,908, or 24.62 per cent since 1900; of Honolulu, 52,183, an increase of 12,877, or 32.76 per cent. The population by races is as follows: Hawaiians, 26,041, a decrease of 3,746; part-Hawaiians, 12,506, an increase of 4,658 (of these 8,772 are Caucasian-Hawaiians and 3,734 Asiatic-Hawaiians); Portuguese, 22,303, an increase of 6,628; Spanish, 1,990, and Porto Ricans, 4,890 (both new); other Caucasians, 14,867, an increase of 4,290; Chinese, 21,674, a decrease of 4,088; Japanese, 79,674, an increase of 18,559; and all others (including 4,533 Koreans, 158 blacks, 537 mulattoes, and 2,736 others), 7,964, an increase of 4,727.

NATIONAL PARKS AND RESERVATIONS.

The policy of setting aside tracts of land in various sections of the United States as pleasure grounds for the people was inaugurated by Congress by the act of March 1, 1872, in establishing the Yellowstone National Park in Wyoming, and thereafter from time to time other lands in various sections of the country were set aside for such purpose and as a practical means of preserving the wonders of nature therein from desecration. These reservations now aggregate 12 in number, embracing over 4,500,000 acres, to which should be added the Grand Canyon of the Colorado River, for the creation of which as a national park recommendations have heretofore been submitted.

The areas of these parks, with date of establishment of each, are as follows:

Name.	Date of establishment.	Acres.
Yellowstone, in Wyoming, Montana, and Idaho	Mar. 1, 1872	2,142,720.00
Yosemite, in California	Oct. 1, 1890	719,622.00
Sequoia, in California	Sept. 25, 1890	161,597.00
General Grant, in California	Oct. 1, 1890	2,536.00
Mount Rainier, in Washington	Mar. 2, 1899	207,360.00
Crater Lake, in Oregon	May 22, 1902	159,360.00
Wind Cave, in South Dakota	Jan. 9, 1903	10,522.00
Sullys Hill, in North Dakota	Apr. 27, 1904	780.00
Platt, in Oklahoma	July 1, 1902 Apr. 21, 1904	848.22
Mesa Verde, in Colorado	June 29, 1906	42,376.00
Five-mile strip for protection of ruins	do	175,360.00
Hot Springs Reservation, in Arkansas	June 16, 1880	911.63
Glacier, in Montana	May 11, 1910	981,681.00
Total		4,606,153.85

Public interest in these national reservations, not only in this country, but abroad, is constantly increasing, as is indicated by the number of visitors thereto. During the past year the total number of visitors to all these parks aggregated approximately 224,000, as against 198,506 in 1910. There is every reason to believe that travel thereto will be greatly augmented in the future, especially during 1915, when the Panama-Pacific International Exposition will be held in San Francisco, and the various transcontinental roads will doubtless provide a transportation rate calculated to attract visitors to the various reservations as well as to the exposition.

For the purpose of bringing together the superintendents of the various parks, and discussing the many difficult problems presented in the administration of the affairs of each, I presided at a conference held under my direction in the Yellowstone National Park in September, 1911, at which there were in attendance the Assistant Secretary, the chief clerk, and other representatives of this Department, representatives of the Departments of Agriculture and War, the various transcontinental railroads, and of concessionaires in the several reservations. Many phases of park administration were discussed, including hotel accommodations, public transportation, construction of roads, trails, and bridges, fire protection, forestry, protection of game, and the enforcement of the park regulations generally. This conference should result in more effective administration than it has heretofore been practicable to secure. The consensus of opinion, however, at the conference was that development of the national reservations should proceed along more liberal lines than has heretofore obtained, and that the supervision of the activities of the various parks should be centralized in a bureau especially charged with such work.

There are hereto appended tables giving the location, date of establishment, area, private holdings, if any, the number of visitors, and the special characteristics of the various national parks under the supervision of the Secretary of the Interior; the appropriations made by Congress for the protection and improvements thereof during 1911 and for five years prior thereto, as well as the revenues derived from leases, privileges, and concessions in said reservations received during the said period.

NATIONAL MONUMENTS AND PRESERVATION OF AMERICAN ANTIQUITIES.

By an act approved June 8, 1906, entitled "An act for the preservation of American antiquities," the President of the United States is authorized, "in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments." Under such authority the President has created the following monuments:

National monuments administered by Interior Department.

Name.	State.	Date.	Area.
			Acres.
Devils Tower	Wyoming	Sept. 24, 1906	1,152
Montezuma Castle	Arizona	Dec. 8, 1906	160
El Morro	New Mexico	do	160
Chaco Canyon	do	Mar. 11, 1907	20,625
Muir Woods[1]	California	Jan. 9, 1908	295
Pinnacles	do	Jan. 16, 1908	[2] 2,080
Tumacacori	Arizona	Sept. 15, 1908	10
Navajo[3]	do	Mar. 20, 1909	[4] 600
Mukuntuweap	Utah	July 31, 1909	[2] 15,840
Shoshone Cavern	Wyoming	Sept. 21, 1909	210
Natural Bridges[5]	Utah	Sept. 25, 1909	[2] 2,740
Gran Quivira	New Mexico	Nov. 1, 1909	[2] 160
Sitka	Alaska	Mar. 23, 1910	[2] 57
Rainbow Bridge[3]	Utah	May 30, 1910	160
Lewis and Clark Cavern	Montana	May 16, 1911	160
Colorado	Colorado	May 24, 1911	13,883
Petrified Forest	Arizona	July 31, 1911	25,625

[1] Donated to the United States.

[2] Estimated area.

[3] Within an Indian reservation.

[4] Based on 15 known ruins with a reserved area of 40 acres surrounding each ruin. Exterior limits of tract specified in proclamation contain 918,310 acres.

[5] Originally set aside by proclamation of April 16, 1908, and contained only 120 acres.

By proclamation of May 24, 1911, a new national monument under the Department has been created, designated as the Colorado National Monument, Colorado. The lands embraced within this reservation are in part identical with those included within the boundaries of the Monument National Park proposed in H. R. 22549, introduced in the Sixty-first Congress, which failed of passage. The monument, however, contains nearly 5,000 acres of land less than the area proposed to be segregated by the national-park bill.

In the case of the Lewis and Clark Cavern Monument, Montana, set aside by proclamation of May 11, 1908, a new proclamation was issued on May 16, 1911, more specifically defining the boundaries thereof.

The Pinnacles National Monument, California, was set aside by a proclamation dated January 16, 1908, at which time it was under the supervision of the Secretary of Agriculture, being within a national forest. By proclamation dated December 12, 1910, the lands on which this monument is located were eliminated from the national forest, and since that date it has been under supervision of the Secretary of the Interior.

The Petrified Forest National Monument, Arizona, was originally set aside on December 8, 1906, with an area of 60,776 acres. The definite location of the principal deposits of silicified wood was not known, the intention being to reduce the area after the lands could be examined and the location of the valuable deposits determined. During the year Dr. George P. Merrill, head curator of geology, National Museum, visited the reservation at the instance of this Department, and submitted a report thereon recommending the reduction of the metes and bounds of the reservation and suggesting the segregation of such portions thereof as are desirable for the use of collectors having permits under the act of June 8, 1908, to take specimens of silicified wood from the reservation. This report met with the approval of the Department, and accordingly, on July 31, 1911, a new proclamation was issued reducing the area of the Petrified Forest National Monument to 25,625 acres.

The supervision of these various monuments has, in the absence of any specific appropriation for their protection and improvements, necessarily been intrusted to the field officers of the Department having charge of the territory in which the several monuments are located. This supervision in many instances is necessarily limited, and considerable difficulty has been experienced in protecting the monuments from vandalism, unauthorized exploration, and spoliation. It is recommended that adequate appropriation be made by Congress for the protection and improvement of these reservations. Only such monuments as in the judgment of the Secretary of the Interior are subject to depredations by vandals and unauthorized collections on the part of the public should be provided with a custodian or superintendent.

The following national monuments are not administered by the Secretary of the Interior. Those that should be continued should be placed under the proposed Bureau of National Parks.

National monuments administered by Department of Agriculture.

Name.	State.	Date.	Area.
			Acres.
Cinder Cone	California	May 6, 1907	[1] 5,120
Lassen Peak	do	do	[1] 1,280
Gila Cliff Dwellings	New Mexico	Nov. 16, 1907	160
Tonto	Arizona	Dec. 19, 1907	[1] 640
Grand Canyon	do	Jan. 11, 1908	[1] 806,400
Jewel Cave	South Dakota	Feb. 7, 1908	[1] 1,280
Wheeler	Colorado	Dec. 17, 1908	300
Mount Olympus	Washington	Mar. 2, 1909	[1] 608,640
Oregon Caves	Oregon	July 12, 1909	480
Devil's Postpile	California	July 6, 1911	800

[1] Estimated area.

National monument administered by War Department

Name.	State.	Date.	Area.
			Acres.
Big Hole Battlefield	Montana	June 23, 1910[1]	5

[1] Set aside by Executive order.

ELEEMOSYNARY INSTITUTIONS.

GOVERNMENT HOSPITAL FOR THE INSANE.

On June 30, 1911, there remained in the hospital 2,862 patients, as against 2,916 remaining on June 30, 1910, a decrease of 54 from the previous year. During the year there were admitted 623 patients, a decrease of 27 from the previous year. The number of admissions added to the number remaining on June 30, 1910, makes a total of 3,539 patients under treatment during the last fiscal year, being an increase of 37 over the previous year. The daily average population for the year was 2,884, as against 2,872.91 for the previous year, thus showing an increase of 11.09. Of the total number of patients admitted, 401 were from civil life, 215 from Army and Navy, and 7 from the Public Health and Marine-Hospital Service.

In prior annual reports attention has been called to the fact that existing laws governing the commitment of the various classes of insane persons to the hospital do not adequately meet the present conditions and need revision, and to the necessity for outlining some definite policy with reference to the future growth of the institution.

Under the present laws, in the commitment of the insane from the District it is necessary to try each case in open court and in the presence of a jury. The necessity for such course is of doubtful propriety, as it can only have the effect of humiliating both the patient and the patient's relatives and has a deleterious effect upon the condition of the person whose mental status is under investigation. In a majority of the States the presence in court of the party whose sanity is to be inquired into is discretionary with the court, and likewise the trial by jury is in the discretion of the court. Persons not residents of the District are frequently arrested, tried, and convicted of vagrancy and other misdemeanors, sentenced for short periods in one of the correctional institutions of the District, and thereafter becoming insane are transferred to the Government Hospital, and their relatives being unknown they become a perpetual charge on the United States.

The law providing for the transfer to this institution of persons charged with crime in the custody of Federal officers or after conviction likewise needs revision. During the period when Indian Territory was practically under the supervision of the Secretary of the Interior it was customary, because they had no place in which to confine the insane in that Territory, to transfer persons committing minor or other offenses in that district, on the slightest evidence of temporary mental aberration, to the Government Hospital for the Insane; and even at the present time United States prisoners convicted in various sections of the country and serving short sentences becoming temporarily insane or mentally incompetent are at once transferred to the Government Hospital; whereas if they had been cared for in the district in which the crime was committed, after the serving of the sentence they would be immediately turned over to the custody of those charged with the care of the insane in the community of which they were legal residents, and the United States be not charged with their care and treatment.

After careful consideration of all the circumstances, and as a result of conferences between officials of this Department and other departments of the Government interested in the matter, a committee was organized consisting of the following: Surg. Gen. George H. Torney, representing the Secretary of War; Surg. A. W. Dunbar, representing the Secretary of the Navy; Robert V. La Dow, superintendent of prisons, representing the Attorney General; Maj. William V. Judson, Corps of Engineers, United States Army, representing the District of Columbia; Mr. Scott C. Bone, representing the board of visitors; and Dr. William A. White, superintendent of the hospital, representing the Secretary of the Interior. The committee was instructed as follows:

1. To investigate and report on any defects in the laws governing the conduct of the institution and the commitment of patients thereto.
2. To investigate and report on the advisability of continuing therein patients committed from the District, and from the Army and Navy, from distant points.
3. To recommend as to the policy to be adopted relating to the growth of the institution, and the matter of additional lands, buildings, equipment, etc.

4. To report on the present conduct of the institution, and to make any recommendations necessary for the improvement of the service and the advancement of the interests of the inmates.

The report of the above-mentioned committee has been submitted and is now under consideration.

FREEDMEN'S HOSPITAL.

There were 2,900 indoor patients treated in this institution during the year, an increase of 31 over the preceding year. One thousand eight hundred and eighty-two cases were received from the District of Columbia and 1,018 from various States. Two thousand seven hundred and twenty-four were discharged, of whom 1,416 recovered, 919 improved, 138 were unimproved, 17 were not treated, and 234 died. The number of patients remaining in the hospital at the close of the year was 176. Of the deaths reported, 57 were beyond medical and surgical aid when received. The surgical work has been very heavy during the past year, involving 1,767 operations, an increase of 285 over the previous year. In the out-patient department, 4,839 were treated, an increase of 1,113 over last year.

The account with the Board of Charities of the District of Columbia shows an unpaid balance of $73,505.71. It is hoped that the Commissioners of the District may see their way clear to include in future estimates to Congress a sum sufficient to cover the contract price for the care of all patients who have been admitted to the hospital as residents of the District of Columbia. The bill rendered during the past year for the care and treatment of this class of patients amounted to $37,139.36, or $11,639.36 more than the appropriation received for this purpose.

The training school of nursing has completed its seventeenth year of work and is represented by 217 graduates. These women are engaged successfully in private nursing and not a few are engaged in institutional work in various parts of the country. At the graduating exercises held on May 19, 1911, 13 nurses received their diplomas.

HOWARD UNIVERSITY.

Howard University was incorporated by the act of March 2, 1867 (14 Stats., 338). The purpose of the incorporation named in the first section of the act was "for the education of youth in the liberal arts and sciences." The incorporators were declared to be "a body politic and corporate, with perpetual succession," etc. Control was vested in a board of 17 trustees.

The incorporators and their successors were authorized to take for the university property, of any character, "by gift, devise, grant, donation, bargain, sale, conveyance, assurance, or will;" to transfer or lease any of the property of the university; and to place at interest, in such manner as a majority of the incorporators or their successors should decide, any money belonging to the university, and with the general powers usually conferred on corporations with reference to the right to sue and be sued in any courts of law and equity, in actions of any character. Congress reserved the right to alter, amend, or repeal the act of incorporation.

The enrollment of the university for the past year was 1,382. The international character of the institution is shown by the fact that these students came from 37 States and 11 foreign countries—from British West Indies 83, British Guiana 7, Cuba 6, Porto Rico 5, Africa and South America 3, and from Dutch West Indies, Bermuda, Liberia, and the Republic of Panama 1 each. Two hundred students completed their studies in the institution, of whom 129 received degrees as follows: Twenty-eight M. D.; 17 D. D. S.; 8 Phar. D.; 28 LL. B.; 6 B. D.; 37 A. B.; and 5 Ped. B.

The school of theology receives no aid from Congress, but is supported entirely through endowments and special gifts. It requires no doctrinal tests, is interdenominational, and is open for all who are preparing for greater efficiency in moral and religious work.

No appropriation was made by Congress for the support of the university until March 3, 1879, although it was established in 1867. In 1879, $10,000 was appropriated "for maintenance." From March 3, 1879, to June 30, 1911, Congress has appropriated for this institution a total of $1,386,340, divided as follows: For maintenance, $894,700; for scientific building and equipment, $90,000; for addition to the manual-training building, $23,000; for tools, books, and improvement of grounds and buildings, equipment of different departments, chemical apparatus, fuel, light, etc., $360,300; and for the construction of a building for coal storage and for other improvements to the university plant, $18,340.

The only buildings erected from appropriations made by Congress are the scientific building, the addition to the manual-training building, and the building for the storage of coal, but for many years separate appropriations have been made for the repairs of buildings and the improvement of grounds. For several years past these two items have been combined in making the appropriations.

A report of the secretary of the university, dated November 10, 1911, shows that on September 30, 1911, the total value of all property belonging to the university was $1,660,748.64, of which $395,504.46 represents endowments. The total amount appropriated by Congress for the university is $1,386,340; the sum of the endowments and the appropriations is $1,781,844.46. The plant, therefore, as it stood on September 30, was worth $121,095.82 less than the aggregate amount of the endowments and the total amount appropriated by Congress for all purposes.

As the law now exists, this Department has no representation on the board of trustees, although it has for several years given administrative examination to the accounts of the special disbursing officer handling appropriations made by Congress for the university. Neither has the Government any title to the buildings erected or improvements made to the buildings from congressional appropriation. At the beginning of the present fiscal year, however, the Secretary of the Interior has, under his general supervisory power and for administrative reasons, directed the disbursing officer of this Department to disburse all moneys appropriated by Congress for this institution. The president of the university, in his report for the last fiscal year, says: "It has become increasingly evident that the institution must depend for the years to come almost entirely on Government support and current receipts from tuition in the several departments." Considering the magnitude of the appropriations made by Congress for the maintenance, improvement, etc., of the university, and the statement of the president thereof, it is manifest that the Government should have greater supervision over the institution, and it is therefore recommended that the act of incorporation of March 2, 1867, be so amended as to give the Government a proper representation on the board of trustees, that appropriations made by Congress shall be expended under the direction of the Secretary of the Interior, and that the institution be required to protect the United States against possible transfer or loss of the lands upon which buildings have heretofore or may hereafter be erected from funds provided by the Government.

COLUMBIA INSTITUTION FOR THE DEAF.

This Department has no supervision over the expenditures of the appropriation made by Congress for, or general supervision over, the administration of the affairs of the Columbia Institution for the Deaf. Under existing law the only duty imposed upon the Secretary of the Interior in relation to this institution is the reception of the annual report thereof and the admission of indigent deaf mutes of the several States and Territories to that institution for instruction in the collegiate branch thereof. In my judgment this Department should either be given control of the expenditure of the appropriation and the administration of this institution, or it should be divested of the minor authority now conferred upon it by law, and the entire control and management of the Columbia Institution for the Deaf vested in the president and board of directors thereof, they being required to report directly to Congress as to the administration of the institution.

MARYLAND SCHOOL FOR THE BLIND.

Section 2 of the act of Congress approved May 29, 1858 (11 Stat., 294), authorizes the Secretary of the Interior to place for instruction in an institution for the blind, in the State of Maryland or some other

State, the indigent blind children of teachable age who are children of persons actually engaged in the military and naval service of the United States, and under section 4869, Revised Statutes of the United States, the blind children of teachable age belonging to the District of Columbia.

The act of May 26, 1908 (35 Stat., 295), making appropriations for the District of Columbia, provided that after July 1, 1908, a contract should be entered into by the Commissioners of the District of Columbia for the instruction, in Maryland or some other State, of indigent blind children of the District, appropriated $6,000 for the purpose, and repealed the permanent indefinite appropriation under section 3689 of the Revised Statutes. Inasmuch as the Secretary of the Interior, by section 2 of the act of May 29, 1858 (11 Stat., 293), was also charged with providing for the instruction of the blind children of all persons in the military and naval service of the United States, while such persons are actually in such service, the expense to be defrayed from the permanent indefinite appropriation above referred to, the question was submitted to the Comptroller of the Treasury as to whether that appropriation was repealed so far as to be no longer available for the instruction of this class of beneficiaries. In an opinion rendered October 27, 1908, the Comptroller of the Treasury held that the act of May 26, 1908, supra, only repealed the provisions of section 3489 of the Revised Statutes to the extent that said section provides for the education of the blind children of the District of Columbia, and that the permanent indefinite appropriation in question is still available for instructing the blind children of all persons in the military and naval service of the United States, in some institution in Maryland or some other State, and that the Secretary of the Interior is authorized to continue to issue permits for the instruction of such children. No permits for this class of beneficiaries were issued during the past year.

SUPERINTENDENT OF THE UNITED STATES CAPITOL BUILDING AND GROUNDS.

The superintendent in his annual report calls attention to the increased administrative service now rendered. In 1905 supervision was exercised over the Capitol Building and Grounds; the Courthouse and Court of Claims Building. Since that date there have been added the Senate and House Office Buildings, the heating, lighting, and power plant for the Capitol and other congressional buildings, and subways connecting the Capitol with the Office Buildings; the court of appeals addition to the courthouse.

The improvements and repairs in the Capitol and Senate and House Office Buildings have been carried on successfully. The central portion of the Capitol and the Dome has been cleaned down and painted; the walls and corridors leading from the crypt in the basement story northward to the Senate wing and those leading northward from the Rotunda were repaired and refinished to conform to the surroundings; an iron stairway has been constructed leading from the corridor in front of the Senate post office, basement story, to the subbasement floor below, landing directly at the entrance to the subway connecting the Capitol with the Senate Office Building. Committee rooms and other rooms have been painted and decorated and plumbing fixtures have been installed. Statuary Hall has been thoroughly overhauled and the walls and ornamental ceiling painted. New chandeliers have been installed in a number of rooms.

The practical completion and satisfactory operation of the new congressional heating and power plant has supplied the Capitol, the Senate and House Office Buildings, and, in a large measure, the Library of Congress during the past year with light, heat, and power.

The expenditures were as follows: Capitol Building and repairs, $39,450; improving the Capitol grounds, $32,100; lighting Capitol grounds, etc., $100,000; engine house, Senate and House stables, $1,500; repairs to courthouse of District of Columbia, $10,000; Court of Claims Building, $3,831.

GENERAL EDUCATION BOARD.

This corporation, which was created by the act of Congress approved January 12, 1903, section 6 of which requires the corporation to annually file with the Secretary of the Interior a report, in writing, stating in detail the property, real and personal, held by the corporation, and the expenditure or other use or disposition of the same, or the income thereof during the preceding year, has for its object the promotion of education within the United States. The corporation owns no real estate, its property consisting of securities and money divided into various funds, according to the purpose for which it is to be used.

On June 30, 1911, the capital funds belonging without restriction to the board amounted to $32,246,377.29, invested as follows: Bonds, $15,786,229.65; stocks, $16,430,758.68; cash, $29,388.96.

The income from the above funds, including income earned but not received and gain on securities sold amounting to $20,594.65, amounted during the year to $1,861,073.15. A gift from Mr. John D. Rockefeller from the income of the special fund in the hands of the board increased this by $200,000, and the unexpended balance from previous year, amounting to $3,636,778.37, brought up the total undisbursed income to $5,697,851.52.

The disbursements during the year were as follows:

Payments on account of appropriations to colleges, universities, etc.	$1,307,878.86
Payments on account of appropriations for farmers' cooperative demonstration work carried on by the United States Department of Agriculture	113,251.62
Payments made on account of appropriations for salaries and expenses of professors of secondary education in Southern States	29,859.79
Expenses	34,139.44
Total	1,485,129.71

This leaves an undisbursed balance of income on June 30, 1911, of $4,212,721.81. It is invested as follows: Bonds, $2,472,582.05; stocks, $805,963.29; income receivable, $204,844.35; cash, $729,332.12

It should be noted, however, that against this balance there are unpaid appropriations amounting to $4,158,668.89.

The John D. Rockefeller special fund is a fund which Mr. Rockefeller controls both as to principal and income. During the year the board, at his direction, gave from the principal $9,912,540.74 to the University of Chicago, one-tenth to be delivered January 1 of each year for 10 years; $924,707.63 was also given during the year to the Rockefeller Institute for Medical Research, of New York. This leaves an undisbursed balance of the fund amounting to $1,568,141.54, which is invested as follows: Bonds, $242,135; stocks, $1,225,940.15; cash, $100,066.39.

The income from this fund during the year was $561,591.42, which, added to the balance from the previous year, makes a total of $1,033,966.14. Disbursements during year were as follows:

Gifts to the University of Chicago	$112,600.00
Gift to general education board income account	200,000.00
Expenses	2,796.23
Total	315,396.23

This leaves a balance of $718,569.91, which is invested as follows: Bonds, $441,973.65; stocks, $2,625; income receivable, $97,855; cash, $176,116.26.

The Anna T. Jeanes fund, the income to be used for negro rural schools, amounts to $200,000. It is invested as follows: Bonds, $182,877.51; stocks, $16,645; cash, $477.49.

The income from this fund during the year was $9,206.81. Added to the balance from the previous year the total available income amounted to $13,711.51. Of this, $8,589.25 was appropriated and paid to various schools, leaving a balance of $5,122.26, all in cash.

During the year all securities and funds held by the board for the Rockefeller Institute for Medical Research were turned over to the board of trustees of that corporation.

IMPROVEMENTS AT LAWTON, OKLAHOMA.

By the act of Congress approved March 27, 1908 (35 Stat., 49), it was provided—

> That the Secretary of the Interior be, and he is hereby, authorized and directed to plat and sell in accordance with section twenty-three hundred and eighty-one of the Revised Statutes of the United States the following-described tract of land, to wit: The south half of section thirty, township two north, range eleven west, of the Indian meridian, in the State of Oklahoma: *Provided*, That the Secretary of the Interior shall reserve from said tract of land, when surveyed, one block for public-park and two blocks for public-school purposes, and shall cause to be erected two suitable school buildings out of the proceeds arising from said sale, the remainder of proceeds, after deducting the expenses necessary to carry out the provisions of this act, to be converted into and become a part of the fund belonging to the Comanche, Kiowa, and Apache Tribes of Indians: *Provided further*, That said sale shall be made as soon as practicable after the approval of this act.

The act of Congress approved February 18, 1909 (35 Stat., 636), provides for extension of time of payments on certain homestead entries in Oklahoma, and amends the above act in the following language:

> The Secretary of the Interior is hereby authorized, in his discretion, to extend the time of payments to the purchasers and their assigns applying therefor upon the lots sold, or to be sold, in pursuance of an act entitled "An act providing for the platting and selling of the south half of section thirty, township two north, range eleven west, of the Indian meridian, in the State of Oklahoma, for town-site purposes," approved March twenty-seventh, nineteen hundred and eight, and the Secretary of the Interior is authorized to permit the unpaid purchase money for such lots to be paid in such installments and at such times as he may deem proper: *Provided, however*, That said purchasers or their assigns shall be required to pay interest on all such deferred payments sufficient to pay the Kiowa, Comanche, and Apache Indians four per centum interest on the payments so deferred, and to pay the local authorities entitled to receive the same the equivalent of the State, county, city, and school tax at the legal rate upon such valuation as the Secretary of the Interior may determine, and to which the lots would be liable if patented, such extension of time not to exceed four years from the date of the approval of this act: *Provided, further*, That not exceeding one-half of the amount which may be set aside by the Secretary of the Interior, under the act above referred to, for the construction of two school buildings may be applied by the Secretary of the Interior to such other improvements as he may deem for the public welfare.

By section 30 of the act of May 29, 1908, 20 per cent of receipts of sales from the above-mentioned source was set aside for use in connection with the construction of a courthouse and post-office building at Lawton, Oklahoma. The attention of the Secretary of the Treasury was called to the provisions of the foregoing acts, and he has set aside for the use of this department from the proceeds the sum of $147,047.03.

Thereafter plans and specifications were prepared for a 10-room schoolhouse to be located on block 31 of the north addition to Lawton and designated as school building No. 1. Contract for the work was let to the McHenry-Beatty Co., of East Liverpool, Ohio, and the building was completed at a total cost, including sidewalks, architect's fees, and supervision of work, of $54,822.96. Contract was also let to E. M. Eby for the construction of a sanitary sewer, which was completed at a total cost, including plans and supervision of work, of $25,867.94. The building and sewer were formally accepted and turned over to the authorities of Lawton and are now in use.

On April 24, 1911, contract was let, after due advertisement, to the same firm for construction of an additional 10-room school building, to be located on block 26 of the north addition to Lawton, and to be designated as school building No. 2, and for the laying of sidewalks around it. The work is now in progress and, it is expected, will be completed early in 1912.

After deducting from the total proceeds of sales of lots, Lawton, Oklahoma, the amounts authorized by the acts of May 29, 1908, March 27, 1908, and February 18, 1909, the balance will, by operation of law, be "converted into and become a part of the fund belonging to the Comanche, Kiowa, and Apache Tribes of Indians."

MEMORIAL TO JOHN WESLEY POWELL.

The International Geological Congress in 1904 considered the advisability of the construction of a suitable memorial of life service to Maj. John W. Powell, Director of the United States Geological Survey, to be erected on the brink of the Grand Canyon of the Colorado, and appointed a committee for the purpose of promoting the project. Thereafter, in the sundry civil act approved March 4, 1909 (35 Stat., 992), Congress, among other things, provided:

> MEMORIAL TO JOHN WESLEY POWELL: For the purpose of procuring and erecting on the brink of the Grand Canyon, in the Grand Canyon Forest Reserve in Arizona, a memorial to the late John Wesley Powell, with a suitable pedestal, if necessary, in recognition of his distinguished public services as a soldier, explorer, and administrator of Government scientific work, five thousand dollars: *Provided*, That the design for said memorial and the site for the same shall be approved by the Secretary of the Interior.

Thereafter, on March 4, 1909, the then Secretary of the Interior designated Dr. W. H. Holmes, Chief of the Bureau of Ethnology, Dr. C. D. Walcott, Secretary of the Smithsonian Institution, and Col. H. C. Rizer, chief clerk of the United States Geological Survey, as members of an advisory committee to assist him in determining the character of the monument and the selection of the best site. Finding it difficult to reach any definite conclusion regarding the character of the monument which would be appropriate and satisfactory without having a somewhat intimate acquaintance with the available sites for selection, the chairman of the committee, Dr. Holmes, visited the Grand Canyon in May, 1909, with a view to making the necessary observations. As a result of such visit the committee submitted a preliminary report recommending the selection of "Sentinel Point," on the rim of the canyon, from which the view of the Granite Gorge is awe-inspiring, as being the most suitable site for the monument, which was approved by the Department, and the committee was authorized to look further into the matter of design and erection of the monument.

On October 19, 1910, the committee submitted a further report, stating, among other things, that—

> In its report to you of June 24, 1909, the committee presented a number of suggestions that had been made touching the character of the proposed monument. After very full consideration the committee has concluded that the most feasible plan to follow is that embraced in the last-named suggestion there submitted, viz., a monumental seat or chair from which the canyon and the river could be viewed.
>
> A model of this plan is presented herewith.
>
> It is proposed to insert in the back of the chair a bronze medallion portrait of Maj. Powell with appropriate inscription. Owing to the limitations marked by the appropriation the committee finds that the only suitable material that can be adopted in construction is concrete.
>
> It is therefore recommended that the committee be authorized to at once proceed to negotiate with responsible parties for effecting the above-indicated design. It is further recommended that the Director of the Reclamation Service be authorized to detail some competent person with experience to superintend the construction of the proposed design, the necessary expenses thus incurred to be paid from the sum of $5,000 heretofore appropriated for the erection of this monument.

This report was approved by the Department October 20, 1910, since which time the committee has had the matter intrusted them under further consideration, and has submitted a tentative design and model for the monument which is now under consideration.

MARITIME CANAL CO. OF NICARAGUA.

Section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua" (25 Stat., 675), provides:

> Said company shall make a report on the first Monday of December in each year to the Secretary of the Interior, which shall be duly verified on oath by the president and secretary thereof, giving such detailed statement of its affairs, and of its assets and liabilities, as may be required by the Secretary of the Interior, and any willfully false statement so made shall be deemed perjury, and punishable as such. And it shall be the duty of the Secretary of the Interior to require such annual statement and to prescribe the form thereof and the particulars to be given thereby.

The report of this corporation has been duly transmitted to Congress. In view of the fact, however, that the Maritime Canal Co. of Nicaragua has no relations whatever with this Department and the Secretary has no duty to perform thereto, except as specified in the above-mentioned law, it is recommended that the act be so amended as to require the corporation to submit directly to Congress such form of report as it may prescribe.

Very respectfully,

WALTER L. FISHER,
Secretary.

The PRESIDENT.

APPENDICES.

APPENDIX A.

Land Classification Work.

[Referred to on p. 44 of this report.]

Progress of coal classification and valuation.

STATUS ON JULY 1, 1910.[1]

State.	Withdrawals outstanding.	Coal lands classified.	Valuation.	Valuation at minimum price.
	Acres.	*Acres.*		
Alaska	(2)			
Arkansas		60,715	$1,473,762	$1,214,280
Arizona	161,210			
California		7,720	585,086	154,404
Colorado	6,656,518	2,058,094	118,818,995	37,911,729
Montana	23,920,978	1,277,491	30,657,031	23,397,552
New Mexico	3,155,295	1,816,144	22,272,272	22,118,654
North Dakota		530,491	7,579,630	7,579,630
Oregon	379,452	80	1,600	1,600
Utah	5,897,958	468,040	14,981,435	6,957,177
Washington	2,210,847			
Wyoming	10,854,704	4,458,151	251,019,401	76,404,019
Total	53,236,962	10,676,926	447,389,212	175,739,045

[1] Correction of previous report.

[2] Area unknown.

STATUS ON JULY 1, 1911.

Alaska	(1)			
Arkansas		60,715	$1,473,762	$1,214,280
Arizona	118,718			
California	239,903	7,720	585,086	154,404
Colorado	5,517,338	2,873,929	167,775,104	50,309,589
Idaho	6,985,417			
Montana	19,890,471	3,512,348	94,463,647	76,398,380
Nevada	92,141			
New Mexico	5,809,490	954,214	21,261,664	13,523,792
North Dakota	18,454,490	230,814	4,582,860	4,582,860
Oregon	3,521	1,897	49,909	37,919
South Dakota	2,375,263			
Utah	6,221,314	636,479	36,576,849	8,287,783
Washington	2,210,807	40	2,000	800
Wyoming	7,013,543	7,147,719	381,804,858	109,933,717
Total	74,932,416	15,425,875	708,575,739	264,443,524

[1] Area unknown.

STATUS ON DECEMBER 1, 1911.

	Acres.	*Acres.*		
Alaska	(1)			
Arkansas		60,715	$1,473,762	$1,214,280
Arizona	118,718			
California	239,903	7,720	585,086	154,404
Colorado	5,464,662	2,873,965	167,776,544	50,310,309
Idaho	1,606,262			
Montana	18,711,566	3,697,824	97,276,955	78,678,983
Nevada	92,141			
New Mexico	5,809,490	954,214	21,261,664	13,523,792
North Dakota	18,454,490	230,814	4,582,860	4,582,860
Oregon	3,521	1,897	49,909	37,919
South Dakota	2,034,131			
Utah	6,134,089	646,521	36,709,469	8,399,403
Washington	2,210,086	40	2,000	800
Wyoming	6,845,859	7,147,719	381,804,858	109,933,717
Total	67,724,918	15,621,429	711,523,107	266,836,437

[1] Area unknown.

Oil-land withdrawals.

State.	Withdrawals outstanding July 1, 1910.[1]	Fiscal year ended June 30, 1911.		Withdrawals outstanding July 1, 1911.	Period July 1, 1911, to Dec. 1, 1911.		Withdrawals outstanding Dec. 1, 1911.
		New withdrawals.	Restorations.		Withdrawals.	Restorations.	
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Alaska		(2)		(2)			(2)
Arizona	230,400			230,400			230,400
California	2,498,173	305,802	1,211,271	1,592,704	14,719		1,607,423
Colorado	87,474			87,474			87,474
Louisiana	414,720			414,720			414,720
New Mexico	419,901			419,901		419,901	
Oregon	74,849			74,849			74,849
Utah	581,566			581,566			581,566
Wyoming	255,461	334,802	21,448	568,815		170,333	398,482
Total	4,562,544	640,604	1,232,719	3,970,429	14,719	590,234	3,394,914

[1] Correction of previous report.

[2] Unsurveyed.

Phosphate-land withdrawals.

State.	Withdrawals outstanding July 1, 1910.	Fiscal year ended June 30, 1911.		Withdrawals outstanding July 1, 1911.	Period July 1, 1911, to Dec. 1, 1911.		Withdrawals outstanding Dec. 1, 1911.
		New withdrawals.	Restorations.		Withdrawals.	Restorations.	
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Florida	2,400	35,439		37,839		2,199	35,640
Idaho	1,102,317		149,929	952,388			952,388
Montana		33,950		33,950			33,950
Utah	107,545	200		107,745			107,745
Wyoming	1,267,494			1,267,494		826	1,266,668
Total	2,479,756	69,589	149,929	2,399,416		3,025	2,396,391

Power-site withdrawals.

State.	Withdrawals outstanding July 1, 1910.	Fiscal year ended June 30, 1911.		Withdrawals outstanding July 1, 1911.	Period July 1, 1911, to Dec. 1, 1911.		Withdrawals outstanding Dec. 1, 1911.
		New withdrawals.	Restorations.		Withdrawals.	Restorations.	
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Arizona	107,550	106,000	160	213,390		23,448	189,942
California	47,819	5,870		53,689	72,112		125,801
Colorado	201,549	10,131	2,506	209,174	4,018		213,192
Idaho	230,971	16,477	17,756	229,692	55,005	4,093	280,604
Minnesota		8,388		8,388	2,866		11,254
Montana	122,515	16,803	11,631	127,687	240	2,520	125,407
Nevada	14,091	1,284		15,375			15,375
New Mexico	14,536		4,830	9,706			9,706
Oregon	176,721	7,948	22,874	161,795	16,814		178,609
Utah	379,912	1,080	33,740	347,252	22,322		369,574
Washington	55,439	26,404	1,457	80,386	22,887	2,136	101,137
Wyoming	103,396	4,094	48,601	58,889	2,660	400	61,149
Total	1,454,499	204,479	143,555	1,515,423	198,924	32,597	1,681,750

Designations under the enlarged homestead acts.

State.	Acreage designated July 1, 1910.[1]	Fiscal year July 1, 1910, to June 30, 1911.		Acreage designated July 1, 1911.	Period July 1, 1911, to Nov. 30, 1911.		Acreage designated Dec. 1, 1911.
		Designations.	Cancellations.		Designations.	Cancellations.	
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Arizona	26,657,280	90,400	157,763	26,589,917			26,589,917
Colorado	20,303,720	50,789		20,354,509			20,354,509
Idaho:							
Secs. 1-5 only		5,347,383	10,545	5,336,838	11,109	1,520	5,346,427
Sec. 6		3,841		3,841	538		4,379
Montana	29,686,126	2,167,404		31,853,530	67,973		31,921,503
Nevada	49,512,960			49,512,960			49,512,960
New Mexico	15,883,343	423,332		16,306,675			16,306,675
Oregon	9,166,960	2,071,661	24,960	11,213,661	65,685		11,279,346
Utah:							
Secs. 1-5 only	6,654,469	111,311		6,765,780	3,833		6,769,613
Sec. 6	1,245,818	129,129		1,374,947	840		1,375,787
Washington	3,401,816	1,080		3,402,896			3,402,896
Wyoming	16,904,673	634,268		17,538,941	35,962		17,574,903
Total	179,417,165	11,030,598	193,268	190,254,495	185,940	1,520	190,438,915

[1] Correction of previous report.

Metalliferous classifications (Northern Pacific R. R. grant lands), July 1, 1910, to June 30, 1911—No classifications July 1, 1911, to Nov. 30, 1911.

State.	Mineral.	Nonmineral.	Total.
	Acres.	*Acres.*	*Acres.*
Montana	130,386	21,722	152,108
Idaho	45,645	90,712	136,357
Total	176,031	112,434	288,465

APPENDIX B.

National Park Statistics.

[Referred to on pages 31 and 75 of this report.]

Appropriations and revenues of national parks for the fiscal years 1906–1911.

	Appropriation.	Revenue.	Total.
Yellowstone National Park:			
1906	$7,500.00	$1,522.50	
1907	7,500.00	2,808.96	
1908	8,000.00	4,699.65	
1909	8,000.00	4,790.20	
1910	8,000.00	18,188.82	
1911	8,500.00	23,420.13	
	47,500.00	55,430.26	$102,930.26
Yosemite National Park:			
1906	5,400.00	1,000.00	
1907	5,750.00	9,193.04	
1908	30,000.00	14,390.06	
1909	30,000.00	16,051.17	
1910	30,000.00	21,373.18	
1911	62,000.00	35,765.48	
	163,150.00	97,772.93	260,922.93

Appropriations and revenues of national parks for the fiscal years 1906–1911—Continued.

	Appropriation.	Revenue.	Total.
Sequoia National Park:			
1906	$10,000.00		
1907	10,000.00	$159.50	
1908	15,550.00	43.15	
1909	15,550.00	46.57	
1910	15,550.00	121.78	
1911	15,550.00	255.65	
	82,200.00	626.65	$82,826.65
General Grant National Park:			
1906	2,000.00		
1907	2,000.00		
1908	2,000.00	63.75	
1909	2,000.00		
1910	2,000.00	50.00	
1911	2,000.00	324.39	
	12,000.00	438.14	12,438.14
Crater Lake National Park:			
1906	3,000.00		
1907–8	7,315.00	25.00	
1909	3,000.00		
1910	3,000.00	11.00	
1911	3,000.00	30.00	
	19,315.00	66.00	19,381.00
Mesa Verde National Park:			
1907–8	7,500.00		
1909	7,500.00		
1910	7,500.00		
1911	20,000.00	100.00	
	42,500.00	100.00	42,600.00
Mount Rainier National Park:			
1907	2,500.00	205.22	
1908	3,000.00	170.00	
1909	3,000.00	1,104.79	
1910	3,000.00	8,953.79	
1911	3,000.00	7,748.48	
	14,500.00	18,182.28	32,682.28
Wind Cave National Park:			
1906	2,500.00		
1907	4,400.00		
1908	2,500.00	200.00	
1909	2,500.00		
1910	2,500.00	340.75	
1911	2,500.00	340.00	
	16,900.00	880.75	17,780.75
Platt National Park:			
1906		37,307.44	
1907		178.00	
1908		7,021.00	
1909		272.00	
1910		2,130.31	
1911	5,000.00	422.75	
	5,000.00	47,331.50	52,331.50
Glacier National Park:			
1911	15,000.00	326.88	15,326.88
	418,065.00	221,155.39	639,220.39

Total appropriations	$418,065.00
Total revenues	221,155.39
	639,220.39

Visitors to national parks, 1906 to 1911.

Name of park.	1906	1907	1908	1909	1910	1911
Yellowstone National Park	17,182	16,414	19,542	32,545	19,575	23,054
Yosemite National Park	5,414	7,102	8,850	13,182	13,619	12,530
Sequoia National Park	700	900	1,251	854	2,407	3,114
General Grant National Park	900	1,100	1,773	798	1,178	2,160
Mount Rainier National Park	1,786	2,068	3,511	5,968	8,000	10,306
Mesa Verde National Park	(1)	(1)	80	165	250	206
Crater Lake National Park	1,800	2,600	5,275	4,171	5,000	[2] 4,500
Wind Cave National Park	2,887	2,751	3,171	3,216	3,387	3,887
Platt National Park	(1)	28,000	26,000	25,000	[2] 25,000	30,000
Sullys Hill National Park	(1)	400	250	190	190	[2] 200
Hot Springs Reservation	(1)	(1)	(1)	(1)	120,000	130,000
Glacier National Park						[2] 4,000

[1] No record kept.

[2] Estimate.

Location, area, and characteristics of national parks.

Name.	Location.	When established.	Area (acres).	Private lands (acres).	Visitors, 1911.	Special characteristics.
Yellowstone	Wyoming, Montana, and Idaho.	Mar. 1, 1872	2,142,720	None.	23,054	Wonderful scenery, geysers, boiling springs, mud volcanoes and springs, mountains, grand waterfalls, brilliant-hued canyons, great lake 8,000 feet above the level of the sea; wild animals.
Yosemite	California	Oct. 1, 1890	719,622	19,827	12,530	Mountain scenery, magnificent waterfalls, the Hetch Hetchy and Yosemite Valley, ice-sculptured canyons, glacier lakes, forests.
Sequoia	do	Sept. 25, 1890	161,597	3,716.96	3,114	The home of the "Big Tree" (Sequoia gigantea), growing to a height of 300 feet with a diameter of 30 feet, the bark being 2 feet thick; rugged and picturesque scenery, beautiful cascades and falls, and wonderful caves.
General Grant	do	Oct. 1, 1890	2,536	160	2,160	
Mount Rainier	Washington	Mar. 2, 1899	207,360	18.2	10,306	Glaciers and wild mountain scenery.
Crater Lake	Oregon	May 22, 1902	159,360	2,458.11	4,500	Rugged mountain scenery, beautiful lake within the crater of an extinct volcano, etc.
Wind Cave	South Dakota	Jan. 9, 1903	10,522	160	3,887	Well known for a cavern having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Platt	Oklahoma	July 1, 1902 Apr. 21, 1904	848.22	None.	30,000	Noted for its bromide and other springs, the waters of which have medicinal qualities; park well wooded, scenery picturesque.
Mesa Verde	Colorado	June 29, 1906	42,376	880	206	Set aside to preserve the prehistoric ruins of an ancient people; rugged scenery.
5-mile strip for protection of ruins.	do	do	175,360			
Hot Springs Reservation	Arkansas	June 16, 1880	911.63	None.	130,000	Famous for its thermal springs, having wonderful medicinal qualities.
Glacier	Montana	May 11, 1910	981,681	16,668.11	[1] 4,000	Famed for its beautiful lakes derived from glaciers, lofty mountains clad with forests, magnificent glacial formations, numberless waterfalls. Game, fish, and birds abound.
Sullys Hill	North Dakota	Apr. 27, 1904	780	None.	[1] 200	Small rugged hills containing prehistoric ruins. Practically a local park.
Casa Grande Ruins	Arizona	Mar. 2, 1889	480	None.	[1] 450	These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.

[1] Estimated.

APPENDIX C.

Agriculture in Alaska.

[Referred to on page 67 of the report.]

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, November 13, 1911.

The honorable the SECRETARY OF THE INTERIOR.

MY DEAR MR. SECRETARY: In reply to your letter of November 9, I will state that this department has been studying the agricultural possibilities of Alaska since 1897. Experiment stations have been established at a number of places and there are such institutions now in operation at Sitka and Kodiak, representing the coast region, and at Rampart and Fairbanks, in the Yukon and Tanana Valleys.

The station at Rampart was established in 1900, and there has not been a season since then when most of the varieties of oats and barley seeded have not matured, and many years wheat and rye have also ripened. Naturally, great differences are noted for different varieties of grain, depending on the origin of the seed, character of the season, method of cultivation, etc. In 1909, out of 63 varieties of cereals sown, 55 ripened their entire crop. These included 1 variety of winter wheat, 7 of winter rye, 27 of spring barley, 15 of spring oats, and 1 each of spring wheat, emmer, and spring rye. In 1910, 32 varieties of spring barley and 20 out of 23 varieties of oats ripened their entire crop. Ten varieties of winter wheat, barley, and rye all matured. There are at present 23 acres under cultivation at this station, which is situated at approximately 65° 30′ north latitude.

At the Fairbanks station, which is near the town of that name and 3° 30′ farther south, there are about 70 acres under cultivation. Part of this land is devoted to growing oats and grass for hay, some to grain experiments, and about 7 acres were in potatoes during the past summer. The work at the Fairbanks station was not begun until in 1907, and an attempt is being made to demonstrate the feasibility of agriculture on a farm scale. Grains have matured here, and there has been no trouble in making hay from the native grasses or from oats especially sown for that purpose. Last year more than $1,500 worth of station-grown potatoes were sold, and this year the crop of 7 acres was estimated in September as worth fully $3,000. At both the Rampart and Fairbanks stations experiments are in progress in breeding earlier and hardier grains, and some promising results have already been attained.

At Sitka, where the headquarters of the Alaska stations are maintained, the investigations are confined to horticultural operations. Varieties of all the hardy garden vegetables have been tested and those best suited to Alaskan conditions determined. Through these experiments and others in cooperation with the branch stations and individuals throughout the Territory, it is possible to determine what varieties of vegetables are best suited to the different parts of the country. Some work with small fruits is in progress at Sitka, and during the past season about $65 worth of strawberries were sold from plants that resulted from the crossing of a native and a cultivated species of strawberry.

On the island of Kodiak experiments with live stock have been in progress since 1907, when there were assembled 11 head of cattle from Kenai, 6 from Wood Island, and 19 purchased in the States. The cattle are all pedigreed Galloways, and those from Wood Island and Kenai were purchased in Missouri in 1906, when the stock-breeding project was begun. They have all been brought together as a matter of economy, and, while a number have been sold and others have died, there were at the beginning of the present fiscal year 82 head of pure-bred Galloways and about a dozen head of grade cattle. Some work has been done at this station with sheep, and the 40 head of the original flock in 1910 have increased to about 80. During the past two years all of these animals have been wintered almost exclusively on native forage, either silage or hay, about 100 tons of each having been made each year from wild grasses. In 1909 and 1910 the cattle grazed until the middle of December, and they were fed from that time until May, when the beach grass afforded some grazing. By June 10 the pasturage was good, and all stock fattened rapidly. The Galloway cattle have proved well adapted to the coast region, and it is planned to give them a trial in the interior as soon as possible. The only stock kept at the Rampart and Fairbanks stations are horses, and no trouble has been experienced in making sufficient hay for them.

As a result of 10 years' active work this Department believes in the possibility of developing an agriculture for Alaska that will be comparable with that of Northern Europe, where conditions are somewhat similar, such as in parts of Norway, Sweden, Finland, and Russia. It is believed that agriculture will supplement any other industry that may be developed in Alaska, and it is possible that ultimately oats and barley can be grown in sufficient quantity to supply not only local demands, but a surplus for exportation. It is probable that stock raising can be made a success and dairying become profitable, as the period of winter feeding and protection is not much if any longer than is now required in many other regions where these industries are carried on.

The Department expects to continue its investigations and extend them as rapidly as its resources will allow, so as to be in a position to give definite advice on all agricultural and horticultural matters relating to the Territory.

Sincerely, yours,

JAMES WILSON,
Secretary.

REPORT OF THE GOVERNOR OF THE DISTRICT OF ALASKA TO THE SECRETARY OF THE INTERIOR FOR THE FISCAL YEAR ENDED JUNE 30, 1911

REPORT OF THE GOVERNOR OF ALASKA.

GOVERNOR'S OFFICE,
Juneau, Alaska, October 1, 1911.

SIR: I have the honor to submit for your consideration my second annual report, covering the fiscal year ended June 30, 1911.

I have given a somewhat ample discussion of several subjects, by reason of those vital and urgent needs of a Territory which heretofore has not had the benefit of adequate legislation and care by Government.

POPULATION.

Any considerable increase in the population of the Territory must await a more liberal governmental policy as a whole, including a revision of the present land laws and the enactment of new ones; and, furthermore, in some measure, a more considerate attitude on the part of the press and people in the States toward the development of Alaska by highly capitalized interests. There has been no gain in population within the last year. The decennial census, taken last year, the returns of which are about to be published, showed an increase as compared with the year 1900 of only 764, including both whites and natives. The total population of 64,356 is about equally divided as between whites and natives. The present density of white population is about 1 person to 19 square miles.

Of the 14 incorporated towns in the Territory in 1910, 5 increased in population between 1900 and 1910; 5 decreased; and 4 are towns which did not exist in the former year. Iditarod, a new town of considerable population, incorporated in 1911, does not appear in the census returns of 1910 as a separate division. Of all the principal white settlements or mixed white and native settlements appearing in the census returns of last year, 9 showed an increase and 14 a decrease, while 27 new settlements had come into being and 4 had disappeared. The 9 places which increased in population were Afognak, Chignik, Douglas, Haines, Ketchikan, Kodiak, Seldovia, Treadwell, and Valdez, and the 14 which decreased were Circle, Eagle, Juneau, Kenai, Nome, Nushagak, Rampart, St. Michael, Sitka, Skagway, Unalaska, Unga, Wood Island, and Wrangell. Besides the places included in the foregoing statement, the latest census returns give a population slightly in excess of 2,000 in several "districts," widely scattered and unorganized, as follows: Chandalar, Forty Mile, Kantishna, Mount McKinley, Nebesna, Tanana (district), and Prince William Sound.

The new settlements which have sprung up in the 10-year census period, as shown by the population returns, are Candle, Chatanika, Chena, Copper City, Cordova, Council, Deering, Dishkakat, Dome, Ellamar, Ester, Fairbanks, Garden Island, Graehl, Hot Springs, Iliamna, Katalla, Knik, Koyukuk, Ophir, Otter, Petersburg, Richmond, Seward, Stevens, Susitna, and Tiekel. At least half of these new settlements experienced a decrease in population in the later years of the decade, some of the people having returned to the States, but many of them having moved on to other places in the Territory where it was thought better opportunities were to be had in mining and other enterprises. The percentage of the latter class is certainly very large, and the change is constantly taking place. This is a condition which is universally recognized. It forms no reflection on the character of the people who make up the population, but simply characterizes the present natural conditions in the Territory—conditions which can be changed to some extent by beneficial legislation, but which will be changed to at least an equal degree by the natural and usual evolution which takes place in a new country.

ASSESSED VALUATIONS AND TAXES.

There are now 15 incorporated towns in the Territory, one of them having been added this year. One of the towns, incorporated some years ago, voluntarily does not exercise any powers under its incorporation. Several others did not make an assessment of taxable property or levy a tax this year, and some of these did not last year. One or two have never done so. In these cases the municipal expenses are defrayed exclusively from the funds collected from the local liquor licenses and occupation licenses, these moneys being paid to the clerks of the district courts and by them turned over to the treasurers of the towns, as provided by law.

The 9 incorporated towns which caused an assessment of property to be made and a tax to be levied this year report a total assessed valuation of $7,669,047. The tax rate of these towns ranges from one-half of 1 per cent to 2 per cent, the average being 1.16 per cent. Five in the same list of 9 towns levied a tax in 1910 also, when the assessed valuation aggregated $3,706,518, as against $3,174,004 this year. Reports from Nome and Iditarod have not yet been received by this office. The amount of taxable property in the incorporated towns is relatively small, and it is not increasing, for reasons the same as those which are holding back the industrial and commercial development of the Territory as a whole. The figures relating to taxable property and taxes are presented in the following table:

Assessed valuation and rate of taxation.

Towns.	1910		1911	
	Assessed valuation.	Rate of taxation.	Assessed. valuation.	Rate of taxation.
Chena	(1)	(1)	(1)	(1)
Cordova	(1)	(1)	$1,165,840	1 per cent.
Douglas	$363,308	1 per cent.	285,000	1 per cent.
Eagle	[2] 125,000	(2)	[2] 100,000	(2)
Fairbanks			3,037,203	2 per cent.
Haines	(1)	(1)	(1)	(1)
Iditarod	(3)	(4)	(5)	(5)
Juneau	1,351,295	1 per cent.	1,341,875	1 per cent.
Ketchikan	641,915	1 per cent.	585,200	1 per cent.
Nome	2,077,675	1½ per cent.	(5)	(5)
Petersburg	(4)	(4)	162,000	½ per cent.
Skagway	700,000	1 per cent.	711,929	1 per cent.
Treadwell	(6)	(6)	(6)	(6)
Valdez	650,000	2 per cent.	250,000	2 per cent.
Wrangell			130,000	1 per cent.

[1] No valuation made and no tax levied.

[2] Valuation estimated but no tax levied.

[3] Town not incorporated until 1911.

[4] New incorporation; no valuation made or tax levied.

[5] No report received by this office.

[6] Incorporation inactive.

LABOR.

There has been a fairly active demand for laborers at good wages in nearly all the Alaska towns and in many of the outlying districts. The whole number of employed was smaller than last year, owing to the completion of the Copper River Railroad. There has been no strike or other serious difficulty involving labor during the year. A table showing the scale of wages for mechanics, miners, and laborers, and the cost of living is transmitted with this report. (See Appendix F.)[a]

COMMERCE.

The products of Alaska shipped to the States in the last fiscal year, other than gold and silver, were larger in value than in any prior year in the history of the Territory. The increase as compared with 1910 was due almost entirely to the large production of canned salmon, of which the market price was unusually high, and of copper ore—the shipments of the latter being suddenly increased upon the completion of the railroad in the Copper River Valley. The total shipments, other than those of precious metals, were valued at $13,813,824, as against $12,349,462 in 1910. The copper ore shipments will increase very largely in the current fiscal year. The domestic shipments of gold and silver in the fiscal year 1911 were valued at $15,171,008, as against $18,401,849 in the year before, when the output was considerably larger.

There was a falling off in shipments of domestic merchandise from the States to Alaska in the last fiscal year, the total being smaller than in any year since 1906.

There was a decrease in the value of coal shipped into Alaska from the United States for domestic consumption, but an increase from foreign countries. The value of coal brought in from both sources was slightly less in the fiscal year 1911 than in 1910.

A general summary of Alaska commerce for each year since 1906 is given in the following tables:

Domestic merchandise shipped from the United States to Alaska, 1907–1911.

	Fiscal year ended June 30—				
	1907	1908	1909	1910	1911
Coal	$277,741	$182,942	$172,238	[1] $208,359	[1] $180,017
Lumber	565,991	419,170	611,110	527,053	548,447
Hardware and machinery	3,852,679	4,824,509	4,812,280	5,709,558	5,247,983
Provisions	5,073,354	5,625,681	5,730,895	5,930,196	4,946,378
Liquors	829,473	733,281	740,667	654,821	604,329
All other	7,211,855	4,171,993	5,119,255	4,942,660	4,209,356
Total	17,811,093	15,957,576	17,186,445	17,972,647	15,736,510

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[1] Besides the domestic coal above mentioned there was foreign coal to the value of $356,435 imported in 1910, and to the value of $382,197 in 1911. In 1911, also, there were shipments of 336 tons of coke, and 6,447 tons of foreign coal shipped to Alaska via the States.

[a] The appendices to the Annual Report of the Governor of Alaska are not reprinted in this publication.

Distribution of domestic merchandise shipped from the United States to Alaska, 1907–1911.

	Fiscal year ended June 30—				
	1907	1908	1909	1910	1911
Southeast Alaska as far west as Sitka	$4,233,428	$4,513,006	$5,386,437	$4,439,244	$4,733,525
Southern Alaska, Yukatat to Unalaska	2,968,515	4,235,089	4,256,676	5,303,831	4,021,560
Bering Sea and Arctic Ocean—all points on seacoast except St. Michael	5,958,731	3,964,548	3,788,784	3,864,219	3,759,275
Yukon River, including St. Michael and Yukon Basin	4,650,419	3,244,933	3,754,548	4,365,353	3,222,160
Total	17,811,093	15,957,576	17,186,445	17,972,647	15,736,510

Value of merchandise and precious metals shipped from Alaska to the United States, 1907–1911.

	Fiscal year ended June 30—				
	1907	1908	1909	1910	1911
Salmon, canned	$8,423,146	$8,125,951	$9,972,316	$9,434,946	$10,288,547
All other fish	722,104	800,165	852,634	969,861	887,165
Copper ore	1,267,621	474,172	455,118	165,566	776,497
Whalebone	367,872	138,989	193,192	136,520	113,772
Furs	646,652	463,108	537,162	574,764	394,485
All other	679,429	915,412	1,044,933	1,067,805	1,353,358
Total	12,106,824	10,917,797	13,055,355	12,349,462	13,813,824
DOMESTIC GOLD AND SILVER.					
Gold	18,564,228	17,490,777	17,782,493	18,393,128	15,151,671
Silver	19,474	13,007	19,383	8,721	19,337
Total	18,583,702	17,503,784	17,801,876	18,401,849	15,171,008
FOREIGN GOLD AND SILVER.					
Gold	6,837,839	3,337,338	3,464,200	3,865,978	3,710,435
Silver	9,311	7,125	14,004	11,246	15,976
Total	6,847,150	3,344,463	3,478,204	3,877,224	3,726,411
Grand total	37,537,676	31,766,044	34,335,435	34,628,535	32,711,243

MINES AND MINING.

The officers of the United States Geological Survey assigned to duty in Alaska have continued to do valuable work, and I leave to them all detailed statements in regard to recent mining developments. A list of their published reports and professional papers appears in an appendix of this report,[a] and others will be ready for distribution within the next few months.

The value of the mineral output for 1911 has not been authoritatively estimated, but as a whole it probably will not greatly exceed that of 1910. The copper production will be much larger, owing to the beginning of shipments from the Copper River region over the new railroad. These, however, did not begin until April. The actual shipments of copper ore from Alaska in the fiscal year 1911, as shown by the customs records, amounted to 23,633 tons, valued at $776,497, as against 13,056 tons, valued at $165,566, in 1910. The disproportionate increase in values presumably was due to the exceptionally high grade of the Copper River ore, but the figures, which were given before smelting, are not accurate.

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[a] Appendices not printed in this publication.

The gold production in the calendar year 1910, according to the latest estimate of the Bureau of the Mint, was valued at $16,987,990, as against $20,339,600 in 1909. The silver production, chiefly incidental to gold mining, was 126,480 fine ounces, as against 198,600 fine ounces in 1909. The figures for 1910 are still subject to correction.

The most notable new developments in precious metal operations have been in the Juneau district, in the Prince William Sound region, and in one or two localities in the lower Yukon Basin. It is to be noted, however, that the important quartz activities in the Fairbanks neighborhood have gone forward steadily, and that the prospect of profitable lode mining there is certainly no less bright than it was a year ago. In the vicinity of Juneau the prospect is that a large mining operation, destined to have an exceptionally long life, will be under full way within the next three years. One company is now driving a tunnel for the transportation of ore to the beach where, it is announced, a mill with 150 stamps is to be installed. The bodies of low-grade gold quartz in Silver Bow Basin, which are distributed among several owners, are said to be even larger than those on Douglas Island, where the largest gold mines in Alaska, and among the largest in the world, are situated. Development has been hindered by litigation over titles and water rights in this and other districts and by "wildcat" stock-selling enterprises.

The outlook on the eastern side of Prince William Sound is brightened by the considerable prospecting activities of the last year, both in gold and copper. The Valdez district, where one highly successful gold-quartz mine has been developed, has been the source of much activity during the present season, and there has been increased prospecting in the vicinity of Seward.

The placer fields of the Iditarod have been somewhat disappointing to those who hoped to find pay on a large number of creeks, but the operations on a few of the streams have been highly profitable. A stampede took place to Ruby Creek, in the lower Yukon Valley, near Anvik, last summer, but definite reports as to valuable finds are lacking at this time.

The greatest mining activity in the Seward Peninsula is still centered at Nome, where operations are now largely confined to dredging. There are now about 12 or 14 dredges in the Nome district, and the camp is still prosperous, the center of a considerable population.

MINING LAWS.

The serious defects in the general mining laws as applied to Alaska are becoming still more apparent. The existence of provisions which tend to retard development and to encourage mere speculation has often been complained of by intelligent and progressive mining men in the United States. In Alaska there is still more ground of complaint, for the owners of mining claims in many cases reside elsewhere, and have no intention of operating their claims. The motive to develop as a condition of ownership—the central fact in the activities of some of the most progressive mining States in other parts of the world—is entirely wanting in Alaska. The requirement that a certain amount of annual assessment work be done does not answer the purpose of development at all, nor would it do so even if the provision were not evaded notoriously in many instances. Moreover, the amount of assessment work required when the owners of eight mineral claims form an association is absurdly small. To the honest prospector and miner actually on the ground for the purpose of mining, the association tract so far as the provision for annual assessment work is concerned is an abomination. I quote from my annual report for 1910:

> According to the present practice the exercise of powers of attorney frequently retards mineral development. This is true when claims are staked in association tracts, it frequently being the case that a single individual holding seven powers of attorney reserves 160 acres of placer ground and holds it from year to year merely by performing $100 worth of assessment work. The ground is often held for speculative purposes only, and in case the persons who gave the powers of attorney are nonresidents who have never even visited Alaska speculation is almost certain to be the motive for holding the claim.
>
> These absentees would soon lose their desire to speculate if a law were enacted requiring that assessment work on an association claim be performed to the amount of $100 for each individual claim of 20 acres. That there is no such law at present is a crying evil, and the interest of every genuine prospector and bona fide resident in Alaska demands that the evil be mitigated.
>
> Also, for the purpose of reducing the bad effects of absenteeism and speculation, the time within which assessment work must be done should be shortened. At present it is possible for the owner of a location made in January of any year—and the owner may be a nonresident who has merely given a power of attorney for speculative purposes—to hold a placer claim almost two years without performing or paying for any assessment work whatever.

Other changes in the law have been suggested, about which there is much difference of opinion; but there is a consensus of opinion among mining men in the Territory that no good ground exists for opposing such modifications as the foregoing. Under existing conditions, development is discouraged by a variety of causes; but one of the worst of these is the frequent and long drawn out litigation in the courts over mining claims and water rights, which the present system induces.

FISHERIES.

Next to mining, the fishing industry is the most productive in the Territory, and owing to the great increase in value of the products in 1910 and 1911 it is probably the most profitable as well.

In the calendar year 1910 there were employed in the several branches of the fisheries 15,620 persons, an increase of 3,032 over 1909. Of these, 6,836 were whites, 4,147 Indians, and 4,637 orientals. The most gratifying feature is the large increase in the number of whites and natives employed, as all the natives and many of the whites are permanent residents of Alaska. The tendency of this industry is more and more to disprove the reckless statements spread broadcast that the cannery men "take everything out and leave nothing in" the Territory. The call is always for native labor, but the supply of trained workers does not equal the demand. Not only to meet a very large pay roll, but for the purchase of salmon cases and other materials, the cannery men, although usually not residents themselves, every year leave a large percentage of their total expenditures in Alaska, where the money enters into the channels of local business.

The total investment in the fisheries last year was $20,711,422. The finished product was 214,536,433 pounds, having an export value of $13,259,859, an increase of 12,553,195 pounds and $2,078,471 over 1909.

Salmon.—Owing to the further increase in market value of all grades of canned salmon, the season just closed has been the most profitable in the history of this industry. While the runs in Nushagak and Chignik Bays, Karluk, and in the northern part of southeastern Alaska did not come up to expectations, those in other parts of the Territory more than made up the shortage, and it is probable that the pack of canned salmon was the largest ever produced. The statistics are not yet complete, but the pack was 2,876,000 cases of 4 dozen 1-pound cans each. Thirteen more canneries were operated than in 1910, and it is certain that more canneries will be constructed this winter for operation in 1912.

Halibut.—The highly profitable prices realized for fresh halibut in 1909 caused an enormous increase last year and this year in the number of steamers and gasoline vessels engaged in that kind of fishing. The catch as reported in 1910 was 21,579,289 pounds, valued at $808,010, as against 5,189,924 pounds valued at $195,529 in 1909. Part of this great increase was due to the change in headquarters of the New England Fish Co.'s fleet of steamers from Vancouver, British Columbia, to Ketchikan, Alaska, thus bringing them within the scope of our fishery report. It is probable that when this year's work is finished a material increase in product will be shown as compared with 1910. In addition to the local fleet, many Puget Sound power vessels visit southeastern Alaska during the period from September to March, inclusive, when, owing to stormy weather and a scarcity of fish, it is not safe or profitable to visit the banks off the Washington coast. In 1910 this fleet was composed of 60 vessels, and its catch in Alaskan waters (with the exception of that of the steamers) amounted to 4,414,555 pounds, valued at $158,260. There is no record available here of what the steamers caught, since they carry the fish direct to their home ports.

This year the steamship *Albatross*, of the Bureau of Fisheries, devoted some weeks to a detailed survey of the waters adjacent to the coast of Alaska, in order to determine the extent and productiveness of the halibut resources of these waters. It is hoped this work will be continued. The results of this survey will be published for the information of fishermen.

Cod.—The fishing stations in central Alaska, as well as the Puget Sound and San Francisco fleets, which are engaged in the cod fisheries in the waters of central Alaska and in Bering Sea, met with good success this season. This industry is believed to be capable of much expansion.

Herring.—The Alaska herring is becoming more popular each year as an article of food, two new plants for its preparation being erected this year, while one salmon mild-curing plant was converted to this purpose. Large quantities are also annually marketed for bait in the halibut and king salmon fisheries. Objection is voiced by the king salmon trollers and by those who catch herring for food and for bait to the large consumption of herring in the manufacture of fertilizer and oil. The use of valuable food fishes for these purposes is an egregious example of waste. This fact is emphasized by a recent report that the Japanese Government is in the market for several thousand tons of dry salted herring for Army rations.

Fish oil.—Two plants for the extraction of oil from the livers of mud sharks and dogfish began operations this year and have been successful. As both species are almost worthless for food, while the dogfish is an enemy of the salmon and other food fishes, their use in the manufacture of oil will be a distinct advantage to the other fisheries.

Whales.—For several years a large plant for extracting oil and making fertilizer from whales has been in operation at Tyee, on Admiralty Island. This year most of the machinery was moved to barges and the plant converted into a floating one, which has been operated successfully in the waters of central and southeastern Alaska in the extraction of oil, the making of fertilizer being temporarily abandoned. Several persons are considering the advisability of building and operating similar plants.

PROTECTION OF FISHERIES.

The fisheries of the Territory are a far more valuable resource than the forests, and in fact are productive of more wealth at present than any other source except the mines. The forests are being protected by means of regulatory measures which are somewhat poorly suited to the region and, on the whole, too restrictive in their nature. The forest regulations do, nevertheless, effect the main purpose of conservation, while the fishery regulations—or rather the lack of certian regulations—assuredly do not. Our British Columbia neighbors furnish an example of superior measures for fishery protection, just as they do in the building of lighthouses to protect their commerce. In British Columbia no salmon cannery can be established until a license or permit therefor has been granted by executive authority, nor will such a license or permit be issued in case it shall appear that another cannery in the location applied for would result in unwarranted depletion of the supply of fish. By this means and others overfishing is very carefully guarded against.

In the absence of such a restriction in Alaska the salmon fisheries in some parts of the Territory are in grave danger from overfishing. Power to restrict the number of canneries in any neighborhood whenever such restriction appears necessary to conserve the supply of fish would seem to be an elementary requirement of proper supervision and control by the Government. I have just called attention to the establishment of a number of new canneries during the last year. Others are to be started next season, and there is already some difficulty in finding suitable locations for fishing, which means that the cannery interests are crowding each other. The greatest and most immediate need for a movement looking toward conservation of resources in Alaska to-day is the need of protecting the supply of food fishes. If the coal fields are opened to development they will in some remote age cease to be productive, but the fisheries will prove inexhaustible if greed is not allowed to destroy them.

It is recommended that the advice already given by the agents of the Bureau of Fisheries in Alaska, and concurred in by the Secretary of Commerce and Labor, be urged upon the attention of the Congress again, to the end that the following measure, proposed by them last year, may be enacted:

> That it shall be unlawful to erect, maintain, or operate in Alaska any new establishment for canning or otherwise preserving for commercial use any salmon or other fish

or fishery product, or to increase the capacity of any such existing establishment, or to reopen and operate any such establishment which has remained closed for the period of three years immediately preceding the passage of this act, without first obtaining the approval in writing of the Secretary of Commerce and Labor: *Provided, however,* That in the case of salmon-packing establishments approval shall be withheld only when in his judgment the fishing operations and investigations in the region adjacent to the proposed location indicate that the number of salmon taken is larger than the reproductive increase of salmon from adjacent spawning grounds: *And provided further,* That in case approval is withheld the applicant interested shall upon demand be given a hearing, of which he shall be notified at least thirty days previously.

Other means of control and changes in governmental policy regarding the fisheries are needed badly. The present method of taxation is not scientific, but as long as gross output continues to be the sole basis of taxation the effort should be to render this system as nearly equitable as can be. The taxing of all kinds of canned salmon, without regard to the value of the particular kind, uniformly at 4 cents per case is a crude method. It is probable that no tax on canned salmon should be less than 4 cents, but the tax on red salmon should certainly be at least twice that figure. It is urgently necessary that a scale of taxes, varying according to the kind and value of the fish, be established by amendment of the present law. The salmon cannery men pay taxes at present somewhat in excess of $100,000 per annum. It is roughly estimated that a just revision of the system of taxation upon gross output would yield a revenue almost if not quite twice as large.

Allusion has already been made to the practice, which ought to be regarded by the law as criminal, of using a vast store of food fishes (herring) for fertilizer and oil. It is impossible honestly to urge any consideration in favor of this industry.

The system of tax rebates as a reward for maintaining private salmon hatcheries should be abandoned. The maintenance of fish hatcheries is a legitimate and customary function of Government, and the stout opposition to the policy of remitting the taxes of cannery men on account of hatchery maintenance which was voiced just prior to the enactment of the present law should have prevailed. Under the present system the Government is simply keeping its money in the wrong pocket, and not a very secure pocket at that. All salmon taxes should be paid, and by at least so much as the Federal Treasury is enriched thereby expenditures for the support of Government hatcheries should be authorized. Then there will be no question of effective supervision of hatcheries, and the public will get money's worth for its money.

The supervision of fishing operations by agents of the Government is as effective as it can be under the present system and laws, but at least one or two more agents in Alaska should be provided, and facilities furnished for rendering their work effective. The salmon agents in a territory as large as this should not be expected to depend on regular means of transportation which frequently do not reach the particular locations where inspection is required, or even upon expensive chartered vessels. Two fast power boats should be provided for the waters of southeastern Alaska, one for Bristol Bay and one for the central coast region.

FORESTS AND TIMBER.

The forest reserves in Alaska are extensive, but the timber, generally speaking, is not of a superior quality. Of course the timber is of great local value, especially for piling, salmon cases, rough dimension lumber, and firewood, but its conservation for use should be accomplished by means of very general provisions, elastic in their nature, rather than by a set of regulations similar to those which apply to forests of superior timber located in places tributary to large markets in the States. There is no objection to the practice of the principle that the consumer should be required to pay a reasonable amount for the use of the forests which belong to the public, but frequent and just complaints arise from the delays caused by a cumbersome and slow system of rules and administration. Such delays are especially costly in a frontier region, where development is slow and expensive even under the most favorable conditions that can be found. Some improvement in the regulations and methods of administration have been effected within the last year and a half.

Outside lumber competes constantly with Alaska lumber in the local market. Not including firewood, the lumber brought into Alaska from the States for domestic consumption forms probably from 30 to 40 per cent of the whole amount of lumber consumed in the Territory. The shipment of native lumber from Alaska, except from the forest reserves, is prohibited by law; lumber is rarely exported and its value is insignificant.

The timber cut on the forest reserves in the last fiscal year amounted to 28,147,640 board feet, and the stumpage charges were $29,975.07. The total collections of money on account of the use of forest reserves and their products were $39,917.35, and the expenses of administering the reserves, which amounted to $27,581.70, were 69 per cent of the receipts.

The work of examining the present forest reserves, which was made without full prior examination as to the timber resources, should be taken up actively with a view of restoring unforested areas to the public domain.

By reason of the excessive rainfall in the coastal region, which is most heavily timbered, forest fires in that part of the Territory are infrequent. The dry summer of 1911, however, was marked by destructive fires north of Skagway and in the vicinity of Haines. At the latter point the soldiers from Fort William H. Seward performed valuable service in putting out the fire.

AGRICULTURE.

There has been so much discussion in very recent years about what has been termed the "possibilities of agriculture" in Alaska that a brief statement of the several phases of this discussion may be useful. The possibilities of agriculture were admitted by only a few persons—even of those familiar with local conditions—10 or 12 years ago. There were many who disbelieved then who have themselves recently demonstrated the feasibility of raising garden crops and even some of the grains. As early as 1906 gardening had become common throughout the Territory, even in some of the settlements north of the Arctic Circle. At present no doubt is expressed by anybody in Alaska as to the "possibilities of agriculture," and the local pride of residents everywhere in their gardens and small farms is one of the significant facts impressed upon the minds of visitors from the States. The general discussion of the subject at this time has narrowed down to the question, not of the adaptability of climate and soil as was formerly the case, but of the extent to which farming may be profitably carried on, interior transportation and markets being considered. The feasibility of raising wheat, except in a small experimental way, is still a matter of doubt, but the successful raising of barley, oats, hay, vegetables, and live stock has been well demonstrated. The greatest question now is that of markets to make farming profitable for settlers, and among those persons who are familiar with conditions in the Territory this is almost the only question left.

It is not generally expected that Alaska will become for many generations, if indeed ever, a great agricultural export region, or that it will hold out any inducement to the kind of farmers who have made farming a great and profitable business in such regions as the Ohio and Mississippi Valleys and the Prairie States. With the expansion of the lode-mining industry and other activities more stable than placer mining, and with the establishment of improved means of transportation, the Territory will invite a hardy class of settlers such as have tilled the soil of northern Europe successfully for centuries. The railroads and wagon roads are too few and inextensive and most of the towns too small and isolated to invite agriculturalists whose success depends vitally upon transportation and markets.

In places where these prime conditions are not conspicuously lacking, and in the near vicinity of the larger towns, market gardening is being carried on now with much success. All the vegetables which are commonly raised in New England and in the Middle States thrive in Alaska, even in the coast region.

The local markets have already felt the effect of domestic production, as is well known in some of the principal towns. The shipments of potatoes from the States to Alaska in the fiscal year 1911 were smaller by 25,149 bushels than in 1910; of hay, by 2,155 tons; of beans and peas, by 7,322 bushels; and of onions, by 964 bushels. The decrease in these shipments was certainly due in large measure to the increased domestic production. The imports of some of these articles were also smaller in 1910 than in 1909.

At Fairbanks, which is in the same latitude as middle Norway, an agricultural fair was held last month, exhibits being made of a great variety of native farm products, including ripe grain, both thrashed and in sheaf. Prizes were awarded for the best specimens of grain, vegetables, cattle, and poultry. The exhibition, which was arranged on a large scale, was a highly creditable one. Some of the products from this fair, with others gathered elsewhere, are to be exhibited in New York, at the American Land and Irrigation Exposition next month, and probably under similar auspices at St. Paul, Minn., in December.

The experimental work of the Department of Agriculture in Alaska has been carried on with success during the year. There is no longer any occasion for pursuing experiments in general agriculture or gardening in southeastern Alaska. The continuance of experiments with wheat and other grains in the interior of the Territory is a matter of great economic importance, in order, first, that the question of developing a strain of wheat of strong stalk which will surely mature in the short season may be settled once for all; and, second, that the best varieties of barley and oats may be determined. No further experiments with garden vegetables are necessary, for it is amply demonstrated that there are no finer vegetables anywhere than are grown here. One experimental station may profitably continue its work in developing the best varieties of berries, although the success of such experiments can not be a question in regions where strawberries, raspberries, currants, and cranberries are indigenous and grow wild in great profusion. Efforts should be directed largely toward the demonstration of grain-raising possibilities in the interior valleys in several widely separated localities, and in experiments with live stock in other places than in a single locality on the coast.

GRAZING AND LIVE STOCK.

The luxuriant growth of grasses in the great territory surrounding Cook Inlet, as well as in other favored regions where the winter climate is comparatively mild, induces the belief that stock raising will eventually become a profitable industry. Although products of the soil may never enter into the export trade of Alaska to any considerable extent, the same is not to be said of beef and mutton. The grazing areas are of large extent, and in several localities cattle and even horses, having been left at the end of the working season to shift for themselves, have survived the winter without artificial shelter. Grasses and all the other forms of plant life common to the northern temperate zone grow with great rapidity in Alaska. In the interior valleys, in the vicinity of former mining or construction camps, are commonly seen scattered patches of timothy which sprung, years ago, from the seed of hay brought from the States for horse feed, the roots of which have never been winterkilled. White clover grows wild everywhere in the Territory south of the Arctic Circle.

With stock raising as with agriculture in Alaska, the question is not one of adaptability, but simply of the time when the land shall be needed and markets made available.

SEAL FISHERIES.

Sealing operations on the Pribilof Islands have been carried on by agents of the Department of Commerce and Labor during the last year, only a moderate number of seals (males only) having been killed, and every regard shown for the perpetuation of the herds. The details of these operations do not fall within the scope of this report.

It is confidently hoped that the international agreement recently closed will have the result not only of protecting the seals from indiscriminate slaughter outside the 3-mile limit, but partly relieve our Government from the expensive patrol system.

FUR-BEARING ANIMALS.

Owing to the inadequate protection of certain species of fur-bearing animals, the annual output of furs in Alaska is gradually decreasing.

The new fur regulations promulgated under the broad provisions of the fur-seal law are beneficial, but require amendment in certain particulars. In the interest of economy, as well as general efficiency, the administration of the law for the protection of fur-bearing animals and the law for the protection of game should be placed under one head. The maintenance of a separate force of wardens by the Bureau of Fisheries and by the governor's office does not make for the greatest general efficiency, and the double system is unduly expensive. An intimation of the present incongruous condition is given when it is stated that brown bears are denominated as game, and are protected by the game regulations of the governor's office, while black bears are regarded as fur-bearing animals, subject to the regulations administered by the Bureau of Fisheries. Yet the workings of nature are such that of the same litter some bears are black and others are brown.

PROTECTION OF GAME.

The number of hunters of big game who come to Alaska each year from the States and from foreign countries is increasing gradually. These hunters generally have shown a disposition to comply with the letter and spirit of the game-protection act. The residents of Alaska as a whole respect the chief purpose of the law, and no doubt appreciate that the administration of it has in view the primary idea that game animals are for the uses of the people as food—those uses to be properly controlled so that the supply of game meat may be conserved. Game meat is relied upon as a staple source of food supply in many districts where it is either impossible or extremely expensive to import beef, mutton, and pork.

Respect for the law and its administration would be increased, however, if some of the serious defects and inconsistencies now found in the game-protection act should be cured by amendatory legislation. These matters have been fully discussed in reports from this office and will be dealt with further in my annual report to the Secretary of Agriculture on the administration of the game law.

COAL LANDS.

Since one of the principal coal fields has been visited within the last few weeks by the Secretary of the Interior, and both of the principal fields have been examined by the Director of the Bureau of Mines at the express instance of the Secretary, I deem it unnecessary to enter into a wide discussion of the coal-land question at this time. The prime importance of providing a means by which coal mining in this Territory may be made possible under the law is generally appreciated. That present coal claimants should be treated strictly according to the merits of their respective claims is not denied; while the certainty that the patenting of any number of the existing claims would fail to bring complete solution of the fuel problem in Alaska is well recognized.

In general I would repeat the views on this subject submitted in my annual report for 1910, but recent closer examination of the coal fields has by no means increased the estimate of their value, and the late utilization of California oil for fuel has introduced a new factor which must be considered in connection with even the local market possibilities surrounding the native coal supply.

The total amounts and values of coal shipped into Alaska during the fiscal year, taken from the customs records, were as follows:

Origin.	Tons.	Value.
United States	30,367	$175,926
Foreign countires	79,083	382,197
Foreign countries via United States	6,447	56,580
Total	115,897	614,703

In addition to the above there were shipments of 336 tons of coke, valued at $4,091.

The open-market prices at which bituminous coal was sold at several of the towns on the seacoast of Alaska were as follows, these including the charge for delivery to the premises of the consumer. The prices are for long-ton weights, except at Juneau and Skagway: Juneau, $10; Ketchikan, $11.50; Skagway, $13; Wrangell, $14; Unalaska, $15; Cordova, $17.50; Nome, $21.30. Since the expense of transportation is very high, wood instead of coal is used in the interior towns.

INSANE.

The number of Alaska insane persons cared for in the asylum was 145 on July 16 last, as against 120 on the same date in 1910. There was, however, a decrease in the number of patients in 1910 as compared with 1909. The numbers under treatment in the July quarter for the last four years is shown as follows: One hundred and four in 1908; 132 in 1909; 120 in 1910; 145 in 1911. The high ratio of insanity is to be attributed, no doubt, to the rigors of life in the more isolated settlements and to the hardships encountered by prospectors and miners in remote districts.

The Morningside Asylum, Tabor Heights, Portland, Oreg., where the Alaska insane are being cared for under a five-year contract with the Government, has been inspected at proper intervals by agents of the Interior Department and will be examined again at an early date by this office.

PUBLIC SCHOOLS.

The administration by the governor's office of the public schools outside of incorporated towns has been made more economical and more generally effective by the adoption of regulations governing the conduct of these schools by the several local school boards. A simple system of auditing school treasurers' accounts has been introduced, and annual estimates of expenses are being carefully examined. Nevertheless, the whole cost of maintenance was larger in the school year 1910–11 than in the last preceding year—due chiefly to the establishment of valuable manual training departments in the large schools at Kodiak and on Wood Island. The maintenance of schools in small settlements in this Territory is relatively expensive, but the object of affording schools equal in efficiency to those to be found in places of the same size in the States has been accomplished. The maintenance cost and other statistics of the schools outside of incorporated towns in the last two school years are shown in the following table. Two schools were transferred to newly incorporated towns last year and three new schools were established.

Statistics of white schools.

Location.	School year 1909-10.			School year 1910-11.		
	Pupils of school age.	Cost of maintenance.	Term (months).	Pupils of school age.	Cost of maintenance.	Term (months).
Afognak	96	$2,549.79	9	118	$2,305.00	9
Candle	[1] 10	2,400.00	9	25	2,271.38	9
Chichagof	....	(2)	....	20	1,650.17	9
Council	19	1,925.00	9	(3)	1,600.00	9
Ellamar	39	1,310.00	9	12	1,410.00	9
Graehl	[1] 16	2,400.00	9	24	2,362.70	9
Katalla	25	1,500.00	9	32	1,250.00	9
Kodiak	[1] 109	3,134.00	9	148	6,463.00	9
Latouche	[1] 10	582.73	5	(3)	....	....
Longwood	[1] 30	2,450.00	9	68	2,360.52	9
Mendenhall	....	(2)	....	23	1,405.10	9
Ouzinkie	[1] 36	1,195.43	9	30	1,526.00	9
Petersburg	17	1,200.00	9	....	(4)	....
Haines	16	1,800.00	9	....	(4)	....
Reservation	[1] 45	3,400.00	9	63	4,150.00	9
St. Michael	....	(2)	....	22	1,907.81	9
Seward	[1] 32	2,500.00	10	50	3,822.72	9
Sitka	68	3,458.68	9	82	3,360.00	9
Tanana	[1] 20	3,339.35	9	(3)	2,226.06	9
Teller	[1] 13	1,767.15	6	18	1,414.15	9
Unga	[1] 29	1,719.12	9	26	2,000.00	9
Total maintenance	....	38,631.25	....	....	43,484.61	....

[1] Attendance figures.
[2] School not yet established.
[3] Figures not yet returned.
[4] School transferred to authorities of newly incorporated town.

The maximum amount of $1,000, which the school law allows for the construction of a school building, is insufficient to cover the cost of a suitable building in any of the towns. The funds available for these schools are now ample, and the act of January 27, 1905, should be so amended as to make the amount which may be allotted for a building from $1,200 to $2,500, according to the size of the school. My recommendation that the act also be amended so as to make it possible to establish school districts in places where there are as few as 15 white children of school age is renewed.

The schools for natives, of which there are about 80, are administered by the Bureau of Education, in Washington, through a general superintendent and four district superintendents in Alaska. I renew my recommendation that the seat of administration of these schools be removed from the national capital to Alaska.

NATIVE INHABITANTS.

The improvement of the native people of the Territory in all those lines which are supposed to be promoted by proper influences of civilization is not as rapid as could be desired. One difficulty, which is fundamental, is that the natives are exposed quite as much to the bad influences as to the good influences of the whites. The sale of liquor to Indians is the greatest obstacle to the progress of the native races in southeastern Alaska and the Yukon Basin. Almost as great an obstacle is the presence of disease, with its accompaniment of menacing filth. The one condition is often caused by the other, and the need of compulsory sanitary measures, treated elsewhere in this report, can not be too strongly emphasized.

A more effective effort is now being made by this office to break up the liquor traffic among the natives. This has been rendered possible by the appropriation of $12,000, which became available on July 1, 1911, special agents being employed by the governor's office to assist in the enforcement of the liquor law which makes the selling or giving of liquor to natives a felony. Splendid results have been accomplished, evidence of such a conclusive character having been obtained against about 20 white "whisky peddlers" as to cause them to be bound over for the action of the next grand jury in the first judicial division.

It is earnestly recommended that the appropriation referred to be renewed. The Indians of southeastern Alaska especially are a superior people who, when free from the demoralization of liquor, engage in useful occupations and even in trades requiring superior skill.

Since the foregoing lines were written the United States circuit court of appeals, ninth circuit, has remanded for trial in the district court at Juneau a man who was sentenced to the penitentiary for violating the act of February 6, 1909 (Alaska liquor law), by selling liquor to an Indian. On appeal, the argument was made that natives of Alaska who lead a civilized life have the rights of citizens, and that the provision of the law which forbids the sale of liquor to natives is therefore inoperative. In the event that this view is upheld by the highest court it should be recognized as an urgent immediate duty to cure this defect—if it is susceptible of cure by legislation—by the enactment of a new liquor law. The establishment of the right of Alaska Indians to purchase liquor and of white men to sell it to them means the utter ruin and ultimate destruction of a superior native race.

REINDEER.

The reindeer industry in Alaska, established by the Government in 1892 for the benefit of the Eskimos, long ago passed the experimental stage. The native people have readily adapted themselves to the care of the deer, and the animals are a boon to them. At the end of the fiscal year 1910 the whole number of domestic reindeer was 27,325, distributed among 42 herds. The statistics for the present year have not yet reached this office, but several more herds have been established, and it is probable that the whole number of deer is now upward of 35,000. The number of native people benefited directly by the reindeer is between 3,500 and 4,000. An extensive report of the operations of the reindeer service is published annually by the Bureau of Education.

RAILROAD CONSTRUCTION.

Since October, 1910, the Copper River & Northwestern Railway has extended its line from Chitina to Kennecott, a distance of 65 miles, making a total mileage from tidewater on Cordova Bay of 197. This railroad does not fulfill the need of a main trunk line which should connect the seacoast with navigable waters in the interior, traversing some of the most promising agricultural and mineral regions, but it forms an important link in an improved transportation route between Prince William Sound and the great valley of the Tanana. It has shortened somewhat the time of mail and passenger transportation between Fairbanks and the States.

The extension of the Copper River line into the central part of the Tanana Valley wholly through private enterprise would go a long way toward proving that Government aid for railroads in Alaska is unnecessary. Of any purpose to build such an extension there has been no announcement, however, although the Fairbanks region has been visited recently by representatives of the Copper River and other interests for the purpose of investigating the mining and other prospects there. While the Copper River road is primarily engaged in the transportation of copper ore from Kennecott, several encouraging prospects in gold quartz have been uncovered at points tributary to the road, and there is some reason to believe that these will be developed so successfully as to provide other tonnage for the railroad. The railroad company has adopted the policy of lending some special means of encouragement to prospectors and others who are engaged in opening up the country. This policy seems to be generally regarded by the people as one of enlightened self-interest, destined to be productive of good results for the public as well as for the railroad company. The freight and passenger rates were materially reduced last spring. They are still relatively high.

There are many independent miners in the valley of the Copper River region, some of whom are developing promising copper and gold properties, and to meet whose requests for transportation facilities the railroad company is preparing to build branch lines and spurs. The whole region, however, is in the earliest stages of development.

One of the avowed objects of the builders of the Copper River road was to reach the Bering River coal fields, where coal would be obtained both for tonnage and for the operation of its locomotives. The delay in opening these fields to development has caused the company to contract for the use of California crude oil for fuel on its engines.

The Alaska Northern Railroad, whose track extends as far as Kern Creek, at Turnagain Arm, 72 miles from the ocean terminal on Resurrection Bay, has carried on no construction work within the last year. A gasoline motor car is operated daily between Seward and Kern Creek. This railroad's immediate objective point in the interior is the Matanuska coal field, situated more than 100 miles by the surveyed route north of Turnagain Arm. The plan is said to be eventually to extend the road to navigable water on the Tanana River, probably at Fairbanks, or farther down, at Nenana. Last spring the company announced that funds had been pledged by an English firm or syndicate to the extent of $10,000,000 to extend the road immediately to the Matanuska region, but that this extension was conditional upon the opening of the coal field.

Without expressing any opinion as to investment value of a railroad constructed from the Cook Inlet or western Prince William Sound region to the Tanana River, it is to be said that some of the most promising agricultural land in the Territory is found in the valleys of the Susitna and the Tanana. The reports of the Geological Survey and of prospectors also give some assurance of future development in precious metal mining in these regions; and the construction of a railroad through this great district would no doubt mean much for the opening up of the country.

RAILROAD RATES AND TAXATION.

By your direction it was publicly announced last May that while the supervision of railroad rates in Alaska should remain vested in the Secretary of the Interior, preliminary hearings of all complaints regarding these rates would be heard by the governor of Alaska, who would report to you. It was also announced that this arrangement would not preclude the address of complaints directly to the Secretary. Up to this time no complaint has been filed in this office. Transportation rates on all the railroads are relatively high, but any question of excessive charges must be determined by a careful examination of construction, maintenance, and operating costs, as well as other factors which may form extenuating causes in a new country where prices are high and the volume of traffic comparatively small. The freight and passenger tariffs of the White Pass & Yukon route, the greater part of this railroad being in British territory, have recently been investigated by the Canadian railroad commission. The investigation is pending.

Although Congress at one time distinctly conferred upon the Secretary of the Interior power to regulate rates on railroads in Alaska, the provision was stated in the broadest terms only, and no machinery was provided for its enforcement. It is greatly to be desired that the Interstate Commerce Commission exercise the same supervision over railroad and water carriers in Alaska that it exercises in the States. The question of the commission's jurisdiction in this Territory is now being adjudicated, and in case it shall be found by the highest court that the commission's powers do not apply to common carriers in Alaska, those powers should be extended here by an appropriate amendment of the interstate commerce law.

The Federal tax of $100 per mile per annum on all the railroads in Alaska should be suspended for the present by legislative action. Under present conditions of small earnings or no earnings at all, this tax amounts to a tax upon the people, who are unable to pay this charge in addition to the present high rates for transportation. This tax has already been remitted on all the railroads except the Copper River line and perhaps one other.

ROADS AND TRAILS.

The work of the board of road commissioners for Alaska has been continued during the last year with much success considering the comparatively small funds at its disposal. At the end of the last working season (autumn of 1910) the total mileage of roads and trails constructed since the organization of the commission in 1905 was as follows: Wagon roads, 759; sled roads, two-horse, 507; trails, single horse or dog sleds, 661; trail staked permanently, 85; trail staked temporarily, 1,170 (approximate). A great number of bridges were also built. There were under construction at the end of the fiscal year 1911, the following: Wagon roads, 19 miles; trails, 512 miles; bridges, 1. The most important work of the present season is the building of a trail from Seward to the Iditarod gold field, and of a wagon road along Gastineau Channel, from Juneau, to connect with the trail already constructed to the Eagle River mining district.

This road and trail construction has been carried on with funds amounting altogether to a little more than $2,000,000. Unless an increase in appropriations is made, the new mileage from year to year may be expected to decrease gradually, since the cost of maintenance is naturally raised as the amount of road to be repaired grows larger. When the road commission law was passed it was expected that the only moneys available for road and trail building would be those included in 70 per cent of the "Alaska fund"—that is, a part of the moneys set aside for the construction of roads and maintenance of schools outside of incorporated towns. These moneys applicable to road building have amounted to only a little more than half a million dollars since 1905. Supplementary funds were appropriated by the Congress, however, in nearly every year, and it is hoped that these appropriations will be continued. No moneys ever devoted to public uses in Alaska have brought more beneficial results than these.

While the fundamental advantage of roads is so well recognized that the merits of the subject require no discussion, it is well to consider the special importance of local roads and trails in the interior of Alaska. Scattered mining camps have sprung up in many localities, and mineral prospects have been uncovered in places where access is to be had by no existing means of transportation other than pack animals. The prospector and pioneer in the mining industry should be encouraged by the construction of a road or trail into every promising neighborhood, for transportation of supplies is usually his largest item of expense. If he has to contend with high-freighting costs on the one hand and low-grade mining ground on the other, development sometimes is proven to be impracticable, for the margin of profit which he needs and which he deserves to enjoy as the fruit of his enterprise and industry is represented exactly by the excess of cost of freighting materials and supplies. The work of the road commission has already been followed in several instances by the development of mining operations, which would have been either unfeasible or comparatively unprofitable if roads or trails had not been provided by the Government. By the construction of roads and trails our Government has afforded to pioneers in Alaska one of the several means of encouragement which are afforded by the governments of several of the leading mining countries of the world—notably Canada, Australia, and New Zealand. It is to be confidently believed that a rapid extension of road-building operations in Alaska would bring about as large a measure of immediate industrial development as will the opening of the coal fields of the Territory.

Notwithstanding the value of the work of road construction, complaints come from many parts of the district that meritorious road and trail projects in various localities are not being taken up by the board of road commissioners. The acceptable answer of the commission to these complaints is that the total cost of the waiting projects is now many times the amount which becomes available for road building each year, and that the best is being done that is possible under the circumstances. The complaints merely point to the recognized importance of this work in Alaska and the need of providing ample means for its extension. It is earnestly recommended, in order that the road commission may complete certain projects now begun, and reach mining camps and settlements which are located at points several miles beyond the end of present established roads and trails, that the total funds to be provided for this work next year be not less than $500,000. By having available an unusually large sum in a single season it would be possible to avoid piecemeal construction, extending many short lines of road and trail, and at the same time expending a reasonable amount for maintenance of present routes.

AIDS TO NAVIGATION.

Although more aids to navigation have been installed on the Alaska coast in the last few months than in the whole history of the Territory heretofore, the number of these aids, relatively to the great expanse of the coast line, is still woefully small. Since April, 1910, there have been installed 41 lights, 1 fog signal, and 18 buoys. The first number given, however, includes 4 old lights which were converted from oil burners to acetylene gas burners. The adaptation of the acetylene light in recent years to the purpose of lighting waterways has proved to be a great boon and has revolutionized the estimates of cost for aids to navigation in Alaska. In many situations among the tortuous channels of the inland passages on the Alaska coast an acetylene lens lantern, which is inexpensive to build and to maintain, serves a better purpose than a costly lighthouse, requiring the constant service of resident keepers. No very large appropriation of money has been made for aids to navigation in Alaska, but the development of the acetylene apparatus has made it possible to accomplish a great deal in the last year and a half.

There is a crying need, however, for several high-order lights to mark dangerous points where minor lights will not serve the purpose, and where it is necessary to have fog signals as well as lights. The inspector of this lighthouse district, who has been indefatigable and highly efficient in the discharge of unusually onerous duties during the last year has, I think, been impressed with the great need of lighthouses and fog-signal stations at Cape Decision (Spanish Island), Cape Spencer, and Cape St. Elias. Without particular consultation on the subject by me, the opinion is ventured that these three projects, in the order named, are the most important in Alaska at present. There may be some question whether Cape Decision or Cape Spencer is of more immediate importance. These lights will be expensive, but the lack of proper aids at these and many other points in Alaska has caused the wreck of many passenger and freight steamships. Thirteen steamers of large tonnage, all of them carrying passengers, have been wrecked on the routes between Puget Sound and Alaska in the last three years and a half. Seven have been wrecked in the first nine months of 1911. The establishment of proper aids to navigation is a matter of as large economic importance, probably, as any other project for the development of Alaska. It is not only imperative that the lives of thousands of passengers be protected by this means, but that valuable property be conserved; and, by making navigation less hazardous, the rates of marine insurance, and hence of transportation and cost of supplies, reduced. It is probable that the sum of $400,000 would defray the cost of every remaining lighthouse project in Alaska that has thus far been examined and approved by the Lighthouse Establishment. It is earnestly urged that appropriations at least four times as large as those made for the current year be authorized at the coming session of Congress.

SIX MINOR LAWS.

The singular lack of certain laws applicable to Alaska—all or nearly all of which laws have been enacted for or extended to every other Territory under the jurisdiction of the United States—is a matter which should be neglected no longer. These measures, which belong to a minor class of legislation but are important absolutely, are as follows: 1. Territorial quarantine law. 2. Sanitation and public health. 3. Registration of vital statistics. 4. Supervision of banks. 5. Compulsory school attendance. 6. Relief of destitution. The need of such measures as these is so obvious that I discuss them only briefly under the six headings which follow:

TERRITORIAL QUARANTINE.

Except in such of the incorporated towns as have adopted a local ordinance or are under the limited jurisdiction of the Marine-Hospital Service, there is no lawful means whatsoever in Alaska of establishing and maintaining a quarantine. It is not possible under any law outside of incorporated towns, at places where the services of the marine-hospital authorities are not applicable, to isolate a person inoculated with contagious or infectious disease. The civil code of Alaska is singularly lacking in respect to a provision for dealing with any of those dangerous or deadly diseases which are instantly quarantinable everywhere else in the world. The nearest approach to any provision on this subject is that a person who may inoculate himself or another person with the intent of spreading a dangerous disease may be punished as for a crime. The present want of any adequate means of dealing with an epidemic of disease in Alaska constitutes a great menace. The lesson is brought home at this writing by the existence of an extensive smallpox epidemic on the Porcupine River, in the Canadian possessions, near the Alaska settlements on the upper Yukon River. During several weeks of the last summer there was a similar outbreak in Dawson, at a time when travel down the Yukon was heavy.

The effect upon freight and passenger traffic was serious; and the danger of a transmission of the disease to some of the towns and unorganized mining camps on the Alaska side was keenly felt. In this case the local authorities in Eagle, by stretching the powers granted to a municipality in Alaska, but with the conviction that extreme measures were necessary, interrupted every steamer or small boat proceeding down the Yukon, and compelled the passengers to go into a detention camp for two weeks near the town. This office communicated with the Treasury Department with the result that the Public Health and Marine-Hospital Service dispatched a surgeon from the distant town of Seward, where the officer happened to be performing temporary special duty for the native school service, to the town of Eagle. Although the best was done that could be done under the circumstances, the quarantine was not regularly established until several weeks after the outbreak of the disease at Dawson, only a few miles from the Alaska boundary, on a main route of travel. Had it not happened that the disease existed in a foreign country and threatened our border, the Marine-Hospital Service could have rendered no assistance, for that service would not have had jurisdiction.

A simple quarantine law, containing provisions generally similar to those which have been adopted for other territories, should be enacted without delay.

SANITATION AND PUBLIC HEALTH.

Closely related to the subject of a quarantine law is the question of enacting a measure which will make it possible to put in force a simple sanitary code and regulations for the protection of public health. In this connection I venture to quote from my annual report for 1910:

> The existence of infectious diseases, alarming in their nature and wide prevalence among the native people, calls for vigorous action. The menace of infection extends to the white inhabitants, for there are Indian, Eskimo, or Aleut villages in the immediate neighborhood of nearly all the principal towns, and the natives mingle freely among the whites in public places. The conditions have certainly not improved since 1908 when, in southeastern Alaska, a physical examination being made by one of the school physicians of 1,161 natives, 418, or 36 per cent, were found to be affected with tuberculosis, and 308, or 26 per cent, from venereal diseases. Among other diseases prevalent in southeastern Alaska, as well as in several other parts of the Territory, are trachoma and conjunctivitis; and in the Alaska Peninsula are several cases which, after long and careful examination, are strongly suspected to be leprosy.
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> There is no law which requires the natives to observe any of the ordinary rules of sanitation, and their unfortunate condition is often traceable directly to the filthy condition of their villages and the dwellings in which they live. Yet these people are generally respectful of the law, and a simple set of statutory requirements imposing a mild penalty for nonobservance would unquestionably cause a great improvement in sanitary conditions. The welfare of the white inhabitants, as well as that of the natives, demands such a law.

It is not to be understood that the natives alone should be subject to the provisions of any law which may be enacted for the protection of the public health. The law should apply equally to white residents.

SUPERVISION OF BANKS.

There is no law especially applicable to the organization of banking institutions in Alaska and no legal means for their control. It has already been proven that this condition is capable of producing the gravest consequences, and it is not a credit to a civilized Government that it should be permitted to exist. Besides the national banking associations, of which there are two, and which, of course, are subject to the provisions of the national-bank act, there are in the Territory at least 12 so-called private banks, either organized under the laws of some of the States, or not incorporated at all. None of them is subject to any supervision by State or Federal authority. It hardly seems necessary to say that this situation should be relieved without delay by the enactment of a simple provision for official examination. The expense of such examination probably should be borne by the banks.

REGISTRATION OF VITAL STATISTICS.

Births, marriages, and deaths in Alaska are not recorded except in a haphazard manner. Many are not recorded at all, for registration is not required by the provisions of any law. The absence of adequate vital records is a matter to which the general public gives very little thought, but the importance of keeping such records is of such serious import in civilized communities that no argument on the subject is required. Individual cases of a most pathetic nature have been reported to this office, illustrating the wrongs and hardships which flow from lax registration methods or no registration at all. A widow was unable to collect the insurance on the life of her late husband because there was no record of his death which was acceptable to the insuring company, and she was left in poverty. A young girl, doubtless the legitimate child of certain white parents, was deprived of a comfortable inheritance because there was no written record and no living witness of the marriage of her father and mother. I have not a full statement in connection with these instances, but they are credibly reported, and I believe the facts to be as here stated. At any rate, a multiplicity of such cases is possible under the present condition in Alaska. The lack of marriage records, moreover, encourages loose morals and a diminished regard for the marital relation—especially in a frontier country such as this.

The machinery suitable for carrying out the provisions of a vital registration law already exists in Alaska, as fully set forth in my annual report for 1910; and it is urgently recommended that such a law, which would entail little or no expenditure of public money, be enacted by Congress at the next session.

COMPULSORY SCHOOL ATTENDANCE.

The Government expends about $240,000 per annum for education in Alaska. In addition to this amount the incorporated towns expend a large sum for schools, the moneys in these cases being either those received from Federal taxes and licenses or from local real estate taxes. Attendance of children upon the schools thus provided at large public expense should be compulsory. The white residents generally are eager to send their children to school, but the evil of nonattendance exists to a large extent among the natives. The school superintendents and teachers are unanimous in recommending a compulsory attendance law, and the Commissioner of Education in Washington has recommended it. A bill (S. 4710, 60th Cong., 1st sess.) which was introduced more than three years ago, but not acted upon, would make a good law if amended in some minor particulars and made applicable to whites as well as natives.

Nearly every one of the States and Territories has a compulsory school attendance law.

RELIEF OF DESTITUTION.

No single matter of desired legislation has been brought to the attention of this office in a large number of earnest communications from disinterested citizens and bodies of citizens throughout the Territory than that of providing relief for destitute white persons. Under the present law it is possible to defray the cost of relief for destitute natives, but not for whites. There is remarkably little poverty in Alaska, and the comparatively few cases of destitution have usually resulted from physical accidents. Old age, also, is responsible for a few distressing cases. The sufferers from both causes are most commonly former prospectors and miners—a class of persons to whom the whole Territory is indebted for the enterprise many of them have exhibited under great hardships in exploring the country for precious metals. In his annual report for 1910, written after a visit to Alaska, the Attorney General wrote:

> It is the practice in Alaska when a person without means is found with frozen limbs or badly wounded to charge him with vagrancy in order that he may, as a United States prisoner, receive the necessary medical and surgical attention at the expense of the Government, the appropriation for support of United States prisoners being charged with the expense. The attention of the United States judges, district attorneys, and marshals in Alaska has been called to this practice more than once, and while they have expressed themselves as willing to keep it within reasonable bounds they frankly ask the department what other course is open to them. The usual course in such cases is for some one, even the Federal officials at times, to go before the United States commissioner and swear out a warrant against the injured or frozen person charging him with vagrancy. Sometimes the commissioner imposes a jail sentence of sufficient length to cover the estimated period of the person's confinement in the hospital, the entire period of sentence being thus spent in the hospital and not in jail.
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> These persons it is true are prisoners, they having been charged with the crime of vagrancy, and as such prisoners are entitled to all necessary medical and surgical attention as well as their subsistence at Government expense. The charge of vagrancy is, however, merely a subterfuge, resorted to as the only means of extending public aid to unfortunates who would otherwise suffer and possibly die.
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> Many of these cases involve amputations of the limbs and a long period of confinement in the hospital, the bills in single cases often running to $1,000 or more, in spite of the fact that the charges are kept as low as possible. One of the United States judges in Alaska called my attention to the fact that Alaska has no laws to help the needy and deserving poor, such as all of the States have, about the only statute having the semblance of such a law being the vagrancy act.

I renew the recommendation on this subject submitted in my report for 1910. The Senate at the last session passed a bill in conformity with that recommendation, but the measure was not acted upon in the House.

MILITARY TELEGRAPH.

Efficient service is rendered by the military cable and land-telegraph system, offices being established and transmitting commercial messages at more than 50 seaports and interior points in the Territory. The telegraphs, which are maintained by the War Department, seem to be justified by military considerations, while they are of inestimable benefit to the public. The cost of their maintenance as a part of the military establishment is partly offset by the receipts from commercial messages. It is hoped that the policy of expending a large part of the receipts for extensions and betterments will be continued. The War Department has also established several wireless telegraph stations to supplement the land lines, and the Navy Department has this year put up stations at Kodiak, Unalaska, and St. Paul Island. The telegraph system in Alaska could not be conducted profitably as a private enterprise under present conditions. It is desirable that the rates for commercial messages on the military cable and land lines be maintained at the lowest possible figure, in order that the development of the country may be promoted and the hardships of residence in isolated places alleviated by means of quick communication between the several parts of the Territory and with the outside world.

REVENUE-CUTTER SERVICE.

For the purpose of relieving vessels in distress, for the enforcement of the navigation laws, and for the performance of important miscellaneous duties in connection with maintenance of law and order in remote places on the coast, at least two revenue cutters should be stationed in Alaska waters in the winter season as well as in summer.

The vessel stationed in southeastern Alaska last winter, with Juneau as its headquarters, rendered valuable service. Another cutter should be stationed at Cordova or Seward during the winter.

One of the revenue cutters carried a district judge and other court officers to several remote places in southwestern Alaska this summer, where grand jury and court sessions were held, thus performing an important service.

GOVERNMENT BUILDINGS.

The construction of the post office and customhouse at Juneau and of the Territorial executive mansion, which were authorized by the public building act of 1910, and partial appropriations of money for which were made this year, has not been begun. Plans and specifications for the mansion were completed in July and proposals called for, but all the bids, which were opened on August 8, were in excess of the limit of cost. It is now too late in the season for building operations this year, but it is hoped that an acceptable bid may be obtained and construction work begun next spring.

Preparations for the erection of the post office and customs building, which is intended to provide quarters for all the Federal offices in Juneau, except the district court offices, have gone no further than the acquisition of a site. The site which is excellently located is the entire block, 200 by 200 feet, between Main and Seward and Fourth and Fifth Streets. Nearly all the Government offices are now poorly accommodated, all but one of them being heated by stoves and no protection of records from the constant menace of fire being afforded. Besides, most of the offices are uncomfortable in winter and on the whole are not a credit to the Government. It is hoped that the preparation of plans and specifications for the new office building will be hastened and the work of construction begun in the spring of 1912. The appropriation of $200,000 is inadequate for the purpose of paying for the site and of erecting a building to include space for the large collection belonging to the Alaska Historical Library and Museum. It is earnestly recommended that an additional appropriation of from $75,000 to $100,000 be made, in order that the building may be enlarged for the purpose indicated, as well as to provide more ample space for the other Government offices.

LIBRARY AND MUSEUM.

Only a few books have been added by purchase to the Alaska Historical Library and Museum during the last year, but there have been the usual accessions of Government publications. The most notable addition to the museum has been the purchase of a collection comprising nearly 800 pieces of Eskimo ethnological specimens. These articles are interesting and of great value, the more so for the reason that they are becoming scarce. It is intended to devote ample space to the library and museum collections in the authorized new Government office building at Juneau. At present they are stored chiefly in the building temporarily used for the offices of the governor, where there is not space enough to display them and make them fully useful to the public. A statement of the receipts and disbursements of the library fund may be found in an appendix of this report.[a]

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[a] Appendices not printed in this publication.

TERRITORIAL LEGISLATURE.

Since the enactment of the civil code in 1900, Alaska has enjoyed a form of government much superior to that which was afforded under the organic act of 1884. The recent general rule of appointing residents of the Territory to the local Federal offices has brought good results, and, generally speaking, the character and efficiency of officers—especially among those connected with the district courts—are much higher than was the case 10 years ago. The chief faults in the present government are not found in the mere form of government or in the instrumentalities provided for administering it; they arise, rather, from the lack of certain laws especially suited to local needs. Indeed, several laws which are recognized as necessary everywhere and which have been enacted for the benefit of every other Territory or possession of the United States have been withheld from Alaska. The people believe this is due simply to neglect.

It is generally admitted that if these things were provided by Congress fewer persons would favor at this stage any radical change in the mere form of government. Conditions being as they are, however, and not as they should be, there exists a considerable demand for a local Territorial organization with a legislature elected by the people. This sentiment is made manifest both within and without the Territory. I think the outside advocates may be disregarded, as they are generally not well informed and, moreover, are nonresidents, who would not assume any of the responsibilities of the new government. Among the residents of Alaska there are many sincere advocates of the policy of forming a local Territorial government with an elective legislature, and turning over to the local government all those affairs of local legislation and administration which are usually assumed by Territories fully organized as such. There are others who oppose it strongly; and since these opponents are usually found to be among the larger property owners, sometimes the representatives of large corporations, they have encountered the charge, just in some instances no doubt, that self-interest and not the public interest is responsible for their attitude. So the question has been debated with much bitterness—so much, in fact, that the discussion has not generally been enlightening or valuable—and the subject has been so involved with selfish political ambitions that much of the discussion has not even been sincere. In short, sane and sober consideration of the issue, calculated to determine it on sheer merit, has been conspicuously wanting.

The principal considerations urged in favor of a Territorial legislature are (1) that the people have a constitutional right to govern themselves—at least within the limitations which have been placed upon other Territories prior to statehood; (2) that the members of the local legislature would understand local conditions better than the Members of Congress understand them, and would therefore enact more suitable laws; (3) that a local legislature would devote to Territorial improvements large tax moneys which at present are covered into the United States Treasury and which (it is asserted) exceed the amount of the Federal appropriations for Alaska. The advocates of a legislature either deny the truth or question the sufficiency of a number of the statements set forth in opposition, among which are the following: (1) That the population is so small, so lacking in homogeneity, and to so large an extent unstable, as to render the proposed new government impracticable; (2) that the total amount of taxable property is too small to bear the expense of the new government, including the cost of necessary public works; (3) that, under the proposed change, the Territory would lose more of material benefits than it would gain.

That the members of a Territorial legislature would have a better understanding of local needs than has been shown by the National Congress, and also that their time would be devoted to the consideration of these things as the time of the Congress is not and can not be, is obvious, and this fact is almost exclusively responsible for the attitude of those who are both sincere and thoughtful in their advocacy of a change in the form of government. There are those who are sincere but very poorly informed who employ the statement that large tax moneys are now covered into the National Treasury and withheld from use in Alaska which would become available for local use if a Territorial legislature were in control of the licenses and taxes. A brief statement will correct this misapprehension, but it will at the same time lend some support to the adverse proposition that the Territory is not yet able to bear the expenses of local government and of public works.

The tax and license moneys of every description collected in Alaska, exclusive of customs and internal-revenue receipts, which are usually not devoted to the expenses of local governments, and exclusive of municipal real-estate taxes which are under control of the city councils, amounted in the last fiscal year to $398,135.14. Of this amount $166,254.98 was or will be turned over to the treasurers of the several incorporated towns for the partial support of the municipal governments. The balance, comprising moneys collected outside of incorporated towns, was covered into the "Alaska fund" in the United States Treasury, for use in building roads and trails and maintaining schools in the Territory. The Congress has made direct appropriations for Alaska for the next fiscal year (not including salaries or expenses of officers, the expenses of the administration of justice, the maintenance of prisons and jails, or certain general appropriations which are applicable in part to this Territory) amounting to $799,243.27—that is, $401,108.13 more than the total revenues of Alaska, exclusive of customs and internal revenue. The items of direct and specific appropriation included in the gross amount as given above are: Aids to navigation, care of insane, suppression of the liquor traffic among the natives, protection of game, education of natives, propagation of reindeer, construction of roads and trails, protection of the fisheries, land surveys, and telegraph system. A few other appropriations are omitted because they are purely temporary.

I do not wish to discuss in detail at this time all the considerations which are being urged for and against a separate Territorial government and legislature. Since the subject of Alaska revenues and expenditures, however, is a profitable one to look into, whether the form of government be changed or not, a brief discussion may be deemed appropriate and useful.

It is reasonably to be expected that under an organized Territorial government, Alaska being treated like the other Territories, the Federal Government would cease to make appropriations for roads (the amount of which, in addition to the moneys of the "Alaska fund," have averaged $191,666 per annum for the last six years), for the protection of game ($15,000 per annum, partly offset by about $3,500 collected from hunting and shipping licenses), for the care of insane ($50,000 per annum), and for perhaps one or two other objects which are now being provided for by Congress, including care of Territorial prisoners. (The other Territories care for their own prisoners, and the expense of Alaska jail and penitentiary prisoners is now about $200,000 per annum.) On the other hand, although some of those who oppose an organized Territorial government do so on the ground that the population and the taxable property are too small, it is certain that the products of the fisheries should be taxed from $75,000 to $100,000 more each year than they are taxed at present. Assuming the larger figure to be the correct amount, the license and tax moneys from all present sources, with the new fish taxes added, would aggregate about $500,000 on the basis of the collections for the fiscal year 1911. If it be assumed that the objects to which the tax and license moneys are applied at present ought to be and would be supported to the same extent under the new government, there would be then $100,000 to devote to new objects. If, however, the National Legislature should withhold from Alaska certain present appropriations which are withheld from Territories where full Territorial government prevails, this additional $100,000 would be more than offset by the amount of funds now being appropriated specifically for roads, protection of game, and care of insane—funds which aggregate on the average annually about $250,000.

Unless other new sources of revenue be found, it seems possible if not probable that Alaska under a local government would have annually less money available for public uses by at least $150,000—and if a fair amount be added for the support of a Territorial prison and jail, by at least $300,000—than is afforded under the present form of government.

Two other possibilities, however, in connection with the financial side of the question are to be considered. A Territorial legislature being installed and a separate Territorial treasury being established. if the National Government should decide to leave the care and education of the native people to the local government, the present appropriations for schools, reindeer, suppression of liquor traffic, and relief of destitution and medical relief would either have to be abandoned or supplied by the Territorial treasury. These appropriations now amount to $224,000 per annum. The other of the two possibilities alluded to is that of taxing one other large source of revenue, namely, the mines of the Territory—provided it be deemed good policy to tax the mines further at this stage of Territorial development. Quartz mines which operate stamp mills are taxed already to some extent, the proceeds being covered into the Alaska fund, but a tax of from 1 per cent to 2 per cent upon the gross output of all mines throughout the Territory would yield from $175,000 to $350,000 a year. This estimate is based, of course, approximately upon the present production of metals.

The Arizona Territorial government has for some years, I believe, levied taxes upon an assessed valuation of mines. In examining the tax lists of that and other Territories, however, one is struck with the number of sources of revenue for these Territories which either do not exist at all in Alaska or are so small as to render them unproductive of large tax returns. A cursory and admittedly unscientific examination of the sources of public revenue in Alaska, in fact, fails to promise returns under anything like a just system of taxation of more than $450,000 a year over and above the present revenues, even if a tax of 2 per cent be levied upon the gross output of all mines. Under a Territorial form of government this increased revenue would presumably be offset to the extent of $250,000 of appropriations which the National Congress now gives; furthermore, by at least $150,000 of the amount which the Federal Government now pays for maintenance of penitentiary and jails; and perhaps even overbalanced by the withdrawal of other appropriations, already mentioned, amounting to $224,000. According to this estimate of finances, therefore, the possible gain under Territorial government would be $450,000 a year and the possible loss $624,000. Whether the form of government be changed or not the $75,000 or $100,000 of additional fish taxes ought to be collected.

In the foregoing remarks relative to taxes and appropriations, all of that which may be regarded as unfavorable to a local government and independent treasury is based on the assumption that Alaska under such local government would be treated by the United States just as the other Territories have been treated. That is, it has been assumed that if a local government is authorized it will be with the idea that Alaska is able to take care of itself and does not need any more financial support from the National Government than the other regularly organized territories have received—which is comparatively little. In any event, I apprehend that the people of Alaska do not wish to have the form of a local Territorial government without the substance; that a local legislature with powers less ample than those of other Territorial legislatures, or a local government the expenses of which should be paid in part by Federal appropriations, is not desired.

Even if the matter of general feasibility be not questioned, the subject of a change in the form of government is one of so much gravity and surrounded by so many conditions not generally well understood that it is to be hoped no action will be taken until the Congress shall have received a report on a personal visit of its own Members to the Territory. It is unfortunate that the joint committee appointed last winter was unable, by reason of the extraordinary session, to visit Alaska this year. The people of the Territory have had much cause for the complaint, frequently heard, that many of the measures heretofore enacted for Alaska are poorly adapted by reason of a lack of full information at the time of their passage, and the Territory has suffered because, except by the enactment of the civil and criminal codes, there has never been any effort to create a systematic and carefully related body of laws. It is highly important that the further mistake be not made of passing so momentous a measure as a Territorial government law without full knowledge whether such a measure is expedient and necessary, and if it is expedient and necessary, without a careful investigation as to what the exact scope and nature of its provisions should be. Such investigation and knowledge can best be had by a committee of Senators and Congressmen in Alaska, and on this latter proposition I think the advocates and the opponents of a full Territorial form of government are in accord.

SUMMARY OF NEEDED LEGISLATION.

The following is a summary of legislative measures discussed herein, which in my opinion are most urgently necessary. They are about the same as were recommended in the 1910 report:

(1) Coal lands.
(2) Fisheries.
(3) Mining-law amendments.
(4) Quarantine.
(5) Sanitation and public health.
(6) Supervision of banks.
(7) Registration of births, marriages, and deaths.
(8) Compulsory school attendance.
(9) Relief of destitution.

Increased appropriations are recommended for aids to navigation and for the construction of roads and trails.

TERRITORIAL SEAL.

Acting under the permissive authority granted by the civil code, a new official seal of Alaska has been executed, under my direction, after an improved design. The new seal represents much more accurately than the former seal the present conception of the resources and industries of the Territory.

Respectfully, yours,

WALTER E. CLARK,
Governor.

The SECRETARY OF THE INTERIOR.

IMPERIAL VALLEY, CAL.

IMPERIAL VALLEY, CAL.

DEPARTMENT OF THE INTERIOR,
Washington, December 22, 1911.

SIR: By joint resolution approved June 25, 1910 (36 Stat., 883), the sum of $1,000,000, or so much thereof as might be necessary, was appropriated to be expended by the President for the purpose of protecting lands and property in the Imperial Valley and elsewhere along the Colorado River within the limits of the United States against injury or destruction by reason of the changes in the channels of the Colorado River, and the President was authorized to expend any portion of such money within the limits of the Republic of Mexico as he might deem proper, in accordance with such agreements for the purpose as he might make with the Republic of Mexico. Thereafter the supervision of this work was delegated to the Secretary of the Interior. By your direction a board was convened of persons interested in and familiar with conditions along the Colorado River to make a careful study of the work accomplished and to suggest plans for future operations. The report of this board, with related papers, is herewith submitted for your consideration, with a view to its transmission to Congress.

It will be seen therefrom that the board, among other things, recommends that, to meet the present emergencies of the case, a sum of at least $1,000,000 should be appropriated, and that the work of repair, enlargement, and maintenance of some of the levees heretofore constructed and the protection of the banks of the Colorado River against caving are necessary and essential for the protection of lands and property in Imperial Valley.

In addition to the report in question there are also transmitted the following documents bearing upon the matter: Report of J. A. Ockerson, of May 20, 1911; copy of letter of the Secretary of the Interior, dated June 1, creating the board; and statement of physical and related facts accompanying the board's report.

I have the honor to be, very respectfully,

WALTER L. FISHER, *Secretary.*

The PRESIDENT,
The White House.

REPORT OF J. A. OCKERSON, ENGINEER IN CHARGE, COLORADO RIVER WORK IN MEXICO.

MAY 20, 1911.

SIR: I have the honor to submit this, my report on operations along the west bank of the Colorado River for the protection of lands and property in Imperial Valley, Cal., as provided for by joint resolution of Congress approved June 25, 1910, which act recites:

> That the sum of one million dollars, or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to be expended by the President for the purpose of protecting the lands and property in the Imperial Valley and elsewhere along the Colorado River, within the limits of the United States, against injury or destruction by reason of the changes in the channels of the Colorado River, and the President is authorized to expend any portion of such money within the limits of the Republic of Mexico as he may deem proper, in accordance with such agreements for the purpose as he may make with the Republic of Mexico.

On July 19, 1910, the writer was summoned to Washington, having been designated by the President "engineer to investigate Imperial Valley situation on Colorado River near boundary between the United States and Mexico." The Acting Secretary of the Interior had outlined to the President the conditions in Imperial Valley in the following terms:

> The ascertainment of what is necessary to be done for the purpose of accomplishing permanent avoidance of these recurring menaces to life and property on both sides of the international boundary line will require a thorough examination of physical conditions which, to be effective, should have the cooperation of both Governments and will consume considerable time. In the meantime, Engineer Hill states that unless prompt relief is afforded a water shortage, if not famine, is probable in the Imperial Valley within the next two months. In a country where the heat reaches an intensity of 120°, and even higher, the great loss of property and menace to both animal and human life, which may ensue should such a catastrophe occur, renders it imperative that prompt measures be taken toward averting the same. To that end, I respectfully recommend that you designate an engineer having familiarity with problems involving river control to proceed immediately with an examination for the purpose of determining whether such emergency exists and, if so, to take the steps necessary to avoid the same.

My instructions required a report as to whether—

> the existing emergency is such as to require immediate action, and if so, what is necessary to be done to accomplish the purpose set forth in the resolution.

The writer was also required to—

> make appropriate examination upon the ground and recommend the course which should be pursued to prevent injury and destruction of property in the United States through recurrence of the difficulties which had heretofore from time to time arisen by reason of the unreliability of the course of the Colorado River.

After a complete investigation of the physical conditions, covering the months of August and September, 1910, a report was made under date of October 4, 1910, in which a project was recommended for the control of the Colorado River, and it was also urged that the work be undertaken at the earliest practicable date, as a reasonable assurance of success required that it should be done under low-water conditions. The necessity of prompt negotiations with Mexico which would permit operations in Mexican territory was also urged.

On November 3, 1910, the writer was summoned to Washington for conference with regard to securing the necessary plant, cooperation of the Southern Pacific Co., and other means relating to the prosecution of the work.

The following summary of the more extended project, submitted in detail in my report of October 4, 1910, was prepared by direction of the President and was submitted to the Secretary of the Interior for his approval:

WASHINGTON, D. C., *November 4, 1910.*

The SECRETARY OF THE INTERIOR.

SIR: In executing the work for the protection of lands and property in Imperial Valley, in accordance with the recommendation made in my report under date of October 4, 1910, I have the honor to recommend that a levee for flood control be constructed from a point on the levee of the California Development Co., indicated on map No. 1 accompanying said report, downstream at a distance of about 3,000 feet west of the westerly bends of the Colorado River and extending downstream a distance of about 25 miles.

In general terms the levee may be described as crown 8 feet, side slopes 1 on 3, and width of berm 40 feet, all of which is specifically described in specifications hereto attached.

The levee to be constructed by contract after being duly advertised. Estimated cost of levee, $440,000.

The closure of the break and restoring the flow to the bed of the Colorado River to be made with equipment which is to be furnished by the Southern Pacific Co., at rates informally submitted at conference held with the President on November 4, 1910, the formal terms to be filed at an early date.

To reach the break and to operate the quarry will require the construction of about 7 miles of standard railway track and the temporary use of such track for a period of perhaps 60 days.

At the break a pile trestle about 1,200 feet long will be required and also an earth fill about 1,000 feet long at the northerly end of the trestle.

A rock fill dam, about 1,200 feet long, 20 feet crown, and side slopes of 1 on 2, will be required, the material to be derived from quarries at Pilot Knob (see map No. 1) and from the Mammoth gravel pits. Total estimated cost of closure, omitting possible flood losses, $375,000.

The material for track and trestle to be purchased after due advertisement and the work to be done by hired labor, as being more economical for the United States.

On the left bank of the river immediately above the break it is proposed to excavate a channel down the old river bed amounting to about 20,000 yards. Estimated cost, $6,000.

The purpose being to give an outlet for the water before much head develops against the dam.

I recommend that the proposed work be carried out substantially as above outlined. * * *

J. A. OCKERSON.

This project was approved, as shown by the following letter of the Secretary of the Interior, and the writer was designated "engineer in charge," to execute the work as therein outlined:

NOVEMBER 5, 1910.

SIR: There is submitted herewith the report and recommendations of Consulting Engineer J. A. Ockerson, of date October 4, 1910, covering field examination and plans for the proposed works to protect property in the Imperial

Valley and elsewhere in the United States against overflow and change of course of the Colorado, pursuant to appropriation for that purpose made June 25, 1910, together with summary of said report of date November 4, 1910, including recommendation as to engineering and clerical organization necessary to carry the proposed work into effect.

Said reports and recommendations have been submitted to Gen. W. L. Marshall, who joins with me in recommending the approval thereof; that the work proceed in accordance therewith, or with such modification as emergency may warrant; and that the employment of the engineering and clerical organization be authorized as suggested.

This department having the advantage of the ability and service of Gen. Marshall, it is recommended that the proposed work be done under the general supervision of the Secretary of the Interior, and that the latter be authorized to enter into and execute on behalf of the United States contracts for the work to be done and the materials required, either pursuant to bids and proposals submitted responsive to advertisements calling therefor, or without such advertisements in the event emergency should so require.

In view of the extraordinary character of the work and the urgency of its early completion, it is further recommended that the provisions of the so-called eight-hour law (27 Stat., 340) do not apply to said work. The chief engineer. Mr. Ockerson, advises me that there is great difficulty in securing suitable labor at this point beween Mexico and the United States in sufficient number to have two shifts of labor on this work; that in order to make the preparations to house the labor for such shifts there would ensue great delay in the beginning of the work and a probable postponement of its completion until after the emergency is presented by the rise in the river; and therefore that the only possible method of completing this work in time is to use one shift more than eight hours a day, and that the case presented is therefore within the exception of the statute—an extraordinary emergency.

It is further recommended that the Department of the Interior be authorized to permit the use, in connection with the work proposed, of such equipment belonging to the Reclamation Service as may be useful or necessary therein, and that the transfer of employees from other branches of the Government service to the work proposed be authorized wherever necessary, such employees when so transferred to receive, in accordance with the recommendation of Mr. Ockerson, an advance of 20 per cent over the regular compensation paid in the Government service.

This is in accordance with the practice which, I understand, prevails in the cases of employees designated for service in Panama and elsewhere in the Tropics under conditions not unlike those existing in the present instance.

Very respectfully,

R. A. BALLINGER, *Secretary.*

The PRESIDENT.

NOVEMBER 5, 1910.

Recommendations approved and action authorized in accordance therewith.

WM. H. TAFT, *President.*

While in Washington arrangements were made with President Lovett, of the Southern Pacific Co., for the use of plant and equipment, and it was hoped that the work could be promptly inaugurated. as the low-water season was rapidly passing.

It was at first thought that the consent of the Mexican President would be sufficient to permit the work to proceed, but in formulating the permit it was considered that a formal treaty between the two countries would be essential. This procedure would, of course, require the ratification of the Congresses of the two countries, neither one of which was in session, and other means were sought which would satisfy the legal requirements of Mexico. It was finally agreed that a simple exchange of notes between the respective State departments would be sufficient to authorize the construction on Mexican territory of the protective works on the Colorado River.

The fundamental basis for the agreement as submitted by the Mexican Government is as follows:

1. The works shall be constructed by the Colorado River Land Co., owner of the land on which said works are to be accomplished.
2. The said works shall be done in accordance with the surveys and plans approved by the inspector appointed by the department of fomento, Engineer Don Fernando Beltran y Fuga.
3. In the construction of the said works the rights of the riparian owners on both banks and of the persons to whom the Government of Mexico may have granted permits or concessions for the use of the water of the Colorado River shall stand unimpaired.
4. The Government of Mexico does not guarantee the result of said work or assume any responsibilty to private persons and much less to the Government of the United States.
5. The Government of the United States, even though it should aid the Colorado River Land Co. pecuniarily or otherwise, shall not acquire thereby or by virtue of this agreement any right of ownership or servitude or any other, or over any part of the territory, or over the work that may be erected in Mexican territory whose rights real or of any other nature shall reside in the jurisdiction and sovereignty of the Government of Mexico.
6. The executive shall propose to the Congress of the Union of the Mexican Republic the free entry of the machinery, beasts of burden, wagons, building material, field tents, tools, implements, and equipment necessary for the construction of the said works as soon as the Colorado River Land Co., which is to construct them for its own account and in the capacity of a Mexican company, which is the only one legally competent to make all the arrangements conducive to the exemption of duties on imports, applies therefor, it being expressly understood that free entry will not be granted to food products or to supplies consumed by the said company in that respect.

Negotiations with Mexico made but little progress, and under date of November 19, 1910, the following letter was addressed to the Secretary of the Interior:

St. Louis, Mo., *November 19, 1910.*

Secretary of the Interior,
Washington, D. C.

Sir: * * * It is very important that this matter of customs be settled without delay, and if formal instructions can not be given at once some temporary arrangement should be made for the work to proceed without hindrance pending final settlement.

As supplies and equipment must cross the border to reach the scene of operations, and as instructions have been given to proceed at once with the work, the importance of prompt action is apparent. Instructions should be wired to customs officials in order that no delay be occasioned by any misunderstanding of the matter as to duty.

The delay in securing the sanction of the Mexican Government has reduced the available time to such an extent that the greatest possible progress must be made in every branch of the work from now on, and even then the risk of damage to incompleted work by floods becomes more acute day by day. It is therefore very importat to eliminate as far as practicable delays incident to formalities of all kinds. * * *

Very respectfully,
J. A. Ockerson,
Engineer in Charge.

On November 18, 1910, a small force was organized to make surveys for the railway required from the railway line of the California Development Co. to the proposed site of the dam across Abejas River.

The writer reached Yuma on November 23, 1910, and the organization of the necessary force to carry out the project was begun. The work was necessarily limited to such as was required on the American side of the boundary line. Bunk houses, mess hall, office and hospital buildings were constructed at Andrade, Cal., where the major part of the force would necessarily be located, and contracts were entered into for the delivery of material as far as was practicable under the circumstances.

The situation on December 1, 1910, is set forth in my letter to the Secretary of the Interior in the following terms:

YUMA, ARIZ., *December 1, 1910.*

The SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: In view of your telegram of November 30, regarding negotiations with Mexico, it is deemed advisable to explain the situation as to the proposed work.

The season is now so far advanced that the work of closing the Colorado River break should not be undertaken without a full appreciation of the increasing probability of flood damage and loss or even possible failure due thereto.

Every possible effort has been made to organize a force sufficiently large to handle the work rapidly rather than economically, as would be done if time were not such an important item. Equipment for quarries, transportation, and other uses, as well as material, has been promised by the Southern Pacific Railway and is ready to rush in as soon as word comes that the work is to go on. * * *

Work inaugurated at this season of the year or later is in great danger of being interrupted, and incompleted work may be destroyed by floods. As suggested in my report, the break might be closed and the overflow continue on account of incompleted levee, but this would invite a break at some other point in case of unusual floods. A partially completed levee would exaggerate flood effects at its extremity.

The people interested in this improvement are eager to have it pushed to completion at the earliest practicable date, and are fearful that delay to another season would be fatal. While I agree that postponement might endanger them to some degree, it does not seem probable that the cutting back feared would result in very great damage. It would probably increase the cost and difficulty of closing the break. Postponement of the work would doubtless have a very bad effect on the financial standing of the community which would seriously affect them.

This explanation of the situation seems proper, in view of the delays which have prevented earlier inauguration of construction work, and which now promise to continue for several weeks to come.

Should President Taft deem it best to go on with the work with the understanding that we will probably meet difficulties which will largely increase the cost of the work, I will endeavor in every possible way to carry it to a successful conclusion in the most economical manner practicable under the circumstances, although my professional reputation may suffer through failures due to causes beyond human control.

My preference would be to postpone the work until October, 1911. This would materially reduce the cost of the project as a whole, as it could be handled in a more deliberate manner on account of the longer period of low-stage conditions. It would also permit time for negotiating the necessary treaties so that the work could be conducted by the Government direct, without the intervention of a Mexican corporation, which will complicate the situation to some extent.

I am notifying the Southern Pacific Railway that the further delay incident to pending negotiations will not justify the retention of plant for the proposed closure if it is needed elsewhere. The same general information is given out to prospective contractors.

Very respectfully,

J. A. OCKERSON,
Engineer in Charge.

Early in December a wire was received from the Mexican secretary of state, saying: "I assure you Mexico has already waived all formalities and the Government of the United States has expressed its gratitude to us," but the local Mexican authorities, however, had in the meantime received no instructions, as indicated by the following telegram of December 12, 1910, addressed to the Secretary of the Interior:

YUMA, ARIZ., *December 12, 1910.*

SECRETARY INTERIOR,
Washington, D. C.:

Mexican customs officials refuse to pass anything without official instructions to remit or payment of duty on entry. Have on force account five hundred stock on Mexican side, but unable to send in tools and supplies. Request authority to pay duty so work may proceed.

OCKERSON.

The embarrassment of the situation is further emphasized by the following telegram, which explains the delay and the cost incident thereto:

YUMA, ARIZ., *December 13, 1910.*

SECRETARY INTERIOR,
Washington, D. C.:

Replying wire to-day. Duties already accumulated about four hundred; estimates for week, one thousand. Delay costs Government seven hundred per day. Unless otherwise directed, will pay duty, requesting collector to hold checks pending customs adjustment, to be returned if remitted.

J. A. OCKERSON.

And again, on December 17, 1910:

YUMA, ARIZ., *December 17, 1910.*

SECRETARY INTERIOR,
Washington, D. C.:

Work is absolutely blocked owing to lack of formal instructions from Mexican Government to customs officers to facilitate passing to and fro across line. Creel's statement to Otis that Mexico has waived formalities has not reached customs. Contractors held at line unable to proceed; situation extremely embarrassing and threatens to prevent execution of work.

J. A. OCKERSON.

The progress possible up to December 17, 1910, and subsequently is set forth in the following reports:

YUMA, ARIZ., *December 17, 1910.*

The SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: I have the honor to submit report of operations to date.

One hundred Indians and 62 four-mule scraper teams began grading on railway line Tuesday, December 13. The teams and equipment came in from Mexican side of the line. The laborers were detained by customs formalities from Saturday to Wednesday, 14th. Considerable time has necessarily been occupied in preparing roads over which to haul supplies and forage.

Twenty additional four-mule scraper teams reached the railroad work to-day. All of this is on force account.

A camp has been constructed at Andrade, which is nearly completed and already occupied by boarding contractor, assistants, clerks, quarrymen, and laborers.

Quarry is being prepared for use and sidetracks and switches are being placed.

A carload of explosives has been ordered and bids for fuel oil have been received. Materials needed for trestle across the Abejas River has been ordered from Southern Pacific Railway for delivery December 28.

An order for 22,500 ties has been placed with the Los Angeles Aqueduct Commission and those are now being loaded for shipment to Andrade.

Nine miles of rails have also been ordered for main line and sidings. These are furnished by the Southern Pacific Railway and are being rapidly loaded for shipment.

An arrangement has been made with the Southern Pacific Railway to lay the track with an experienced track gang as soon as grading is sufficiently far advanced.

Equipment of 4 mogul engines, 2 switch engines, 2 steam shovels, 2 pile drivers, and crews have been engaged from the Southern Pacific Railway on the general terms outlined by Judge Lovett. It is hoped to put this equipment into service early in January.

The several contractors have begun clearing right of way and have a large amount of stock and equipment ready to enter, but custom regulations are so exacting that little progress has been made.

Unless some provision be made very soon which will permit them to pass with merely a general inspection I fear that they will give up further attempt to undertake the work.

It will be necessary to employ a force of 10 or more brokers to handle the customs, and even then a large amount of time will be consumed preparing invoices, bonds, etc., covering weeks of the best season of the year, when we should be rushing the work.

The contractors are eager and have equipment sufficient to put in to finish the work before the time for great floods to set in if they can be permitted to enter without such extraordinary delays and secure the supplies promptly as needed.

The Mexican customs officers have not as yet received instructions as to even modifications in custom regulations. As the matter now stands, even our locomotives and cars must enter in bond every time they cross the line, and night trains are prohibited. To build a dam, which requires extraordinary rapid transportation of material under such restrictions, is well-nigh impacticable.

Owing to the rapidly diminishing time at our disposal, it was deemed best to permit the contractors to enter at once upon their work, without waiting for completion of contracts and bonds, which are in course of preparation and will be ready for signature in a few days.

The agreement with the Colorado River Land Co., whereby I am given power of attorney, covers the situation in accordance with stipulations made by Mexican ambassador to our State Department, copy of which you wired to me.

It should be noted that I have no formal official document indicating my right to carry on this work in Mexican territory. A paper of that sort from the Mexican Government would necessarily assist me in dealings with petty officials.

In an effort to get results and terminate the exasperating delay I wired Secretary Creel Thursday in behalf of the Colorado River Land Co., asking that instructions be wired to Mexican collectors. In reply to-day he says it is impossible to give instructions by wire and does not indicate whether they will be given.

We have crowded everything up to the frontier, as far as possible, and now we are practically at a standstill so far as our work across the line is concerned. I have exhausted every possible effort to meet the emergencies as they arise, but it is absolutely necessary to secure from Mexico such instructions as will practically eliminate the boundary line.

Arrangements with Mexican collector at Algodones provides that goods shall pass on consular invoices certified by me and duties paid on bills presented therefor. But for animals, equipment, tools, etc., such as should be passed in bond, there is no provision, as I assume the United States can not give such bond. At all events a personal bond from me is out of the question.

This question of customs is discussed in detail in order that you may be fully advised as to the difficulties which prevent anything like reasonable progress.

Trusting that the embargo will be raised in the very near future, I am,

Very respectfully,

J. A. Ockerson,
Engineer in Charge.

Yuma, Ariz., *December 19, 1910.*

The Secretary of the Interior,
Washington, D. C.

Sir: I have your telegram of December 17 relative to customs and notification of Mr. Puga's appointment as inspector on the part of the Mexican Government.

The telegram from Ambassador Wilson suggests that animals, equipment etc., can be entered free provided satisfactory bond is given therefor. Thi has always been the practice—anyone who furnishes bond can enter under th conditions named in the telegram. So far as I can see the Mexican Government has made no concession whatever in the matter of customs duties.

The local officials have repeatedly wired for instructions but without results.

I have notified the Mexican consul here of the necessity of crossing the Arizona-Sonora line in order to reach work below Abejas River break, and he informs me that permit therefor can not be granted. Unless such permit is granted it will not be possible to reach the work. The contractors have a large force of men and animals waiting for these matters to be settled, and the delay is costing them considerable sums, and if not terminated I fear that they will decline to sign contracts and bonds. They beseige me daily with inquiries as to what they should do, and I am helpless in the matter until official instructions from Mexico reach the Mexican collectors.

It seems to me from my understanding of the case that it will be necessary for us to secure bond for animals, equipment, etc., and pay duty on all supplies and forage. I am investigating the matter of utilizing surety company for the bond and rate therefor.

Have put the whole matter up to Gen. Otis in accordance with your wired instructions of December 17.

On December 5 I wrote to Mr. Puga giving a general statement of proposed work. He replied that he could not meet me until some time in January. A letter from him yesterday states that his Government authorizes me to proceed with the work according to plans submitted, so there will probably be no delay on that score.

The river remains at a very favorable stage, and I hope it may continue without floods until the work is concluded. If, however, the delays continue through Mexican obstructive regulations river conditions become matters of minor importance.

Very respectfully,

J. A. Ockerson,
Engineer in Charge.

[Telegram.]

Yuma, Ariz., *December 21, 1910.*

Secretary Interior, *Washington, D. C.:*

Replying yours 20th, Mexico has not made any concession such as indicated by your dispatches, but, on the contrary, are more exacting in customs restrictions than usual. Have appealed to Creel, to consul here, and collector at Nogales for official here to permit passage across Sonora line, but without result. Work below break can only be reached via Sonora. With no transportation on Mexican side and no habitation within 50 miles, purchase of supplies therein impracticable. Duties about 100 per cent, so with 600 men to feed and house and 2,000 mules to feed 100 days, customs reach large sum. Contractors delayed here waiting to reach work through corner of Sonora demand expenses incident to delay be paid. Shall I grant demand? It hardly seem probable that anyone will give necessary bond without charging therefor and equipment can not be entered without it. With exception of railroad no progress is being made.

J. A. Ockerson.

Yuma, Ariz., *December 28, 1910.*

The Secretary of the Interior,
Washington, D. C.

Sir: * * * Yesterday I succeeded in securing from the manager of the Inter-California Railway his signature to a number of bonds in blank, which will enable us to pass contractors' equipment, animals, etc. Customs duties on supplies for force account and also on contractors' supplies are entered under consular invoice, and the duties therefor have so far been paid by the United States, and under the contracts being entered into this practice must continue.

I can assure you that the work will be carried on in the most economical and expeditious manner possible under the restrictions imposed upon us by the Mexican officials. Up to the present time I have been unable to find any method whereby we can enter the equipment via Sonora line, owing to the absence of a collector at that point of entry. If the delay in regard to this matter continues, it is not improbable that entry will be made with the necessary consular invoice and bond regardless of formal official permission from Mexico.

Very respectfully,

J. A. OCKERSON,
Engineer in Charge.

[Telegram.]

YUMA, ARIZ., *December 31, 1910.*

SECRETARY INTERIOR,
Washington, D. C.:

Answering wire December 31, no customs officers yet at Sonora line, and contractors still detained. Stock, equipment, and supplies entered at Algodones under bond and paying duty. Copies of official instructions to customs officers should be sent to me. * * *

OCKERSON.

YUMA, ARIZ., *January 3, 1911.*

The SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: * * * Below the Abejas River work with adequate force of teams will begin as soon as entry is permitted across the Sonora line.

In order to hasten this I have undertaken to establish a temporary camp for the Mexican customs officers and propose to subsist them while engaged in passing contractors' equipment.

I am just informed by the Algodones customs officials that they have to-day received orders to proceed to the Sonora line, and I expect to take them down Thursday morning.

A considerable amount of the contractors' force has been waiting nearly three weeks for authority to enter via Sonora. In all this controversy about customs it is claimed by the officials at Algodones that up to December 28 no official instructions of any kind had reached them. * * *

Very respectfully,

J. A. OCKERSON,
Engineer in Charge.

YUMA, ARIZ., *January 5, 1911.*

The SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: The following telegrams were received by Mr. Tomas Belendez, the customs official at Algodones, Lower California, Mexico, to wit:

DECEMBER 28, 1910.

You will permit the Land River Co. the importation of machinery, belongings to mules and muleteers, wagons, materials for construction, tents, implements, locomotives, pile drivers, or other things needed by said company for the use of the works on the Colorado River, charging duties to the office of the secretary of foreign relations, while in the meantime Congress approves of an initiative law that has been presented; with the intelligence that you will forward at your earliest opportunity four corresponding copies of invoices and manifests.

JANUARY 3, 1911.

It is now ordered that the customhouse at Mexicali send Contador Paez, Cabo Contreras, en Celadorez, Montejano Bojorques, and with this personnel and with the officer of that customhouse, Lizarrage, you will pass to monument 204, Andrade ranch, to dispatch all goods belonging to the Colorado River Land Co., as though they were imported through the Algodones customhouse, making at said ranch all documents necessary for importation according to telegram dated December 28 last. You can address Mr. Ockerson at Yuma, who has been notified to furnish to you and all your employees means of transportation and habitation and provisions at monument 204. Order relative to dispatches of December 29 modified accordingly. I recommend that dispatches be made with expedition, even if it is outside of office hours, which extras will be retributed by the company at Los Algodones. You will follow on dispatching authorized importations by the contador escribuente burgoa and, as auxiliary, Jenaro Garcia Cota, who will come from Mexicali. Acknowledge receipt of the subdirectory.

J. ROSENBURG.

Information reaching me from Mr. Lawler, in Mexico City, indicated that it would be necessary for us to establish quarters and subsist the several customs officials detailed to handle the equipment crossing the Sonora line near boundary monument 204. A camp for this purpose was established yesterday, and supplies, bedding, and other necessaries were placed at their disposal, and to-day six Mexican customs officers, together with our broker, were dispatched to the line to pass as rapidly as possible the equipment that has been waiting there for a considerable length of time.

You will note that the instructions to the customs officials do not in any way authorize them to waive the rigid inspection required by Mexican law. A Southern Pacific track gang, with 125 men, has been delayed four days at the Algodones station on account of the requirement that all tools and other parts of the outfit must be weighed and inspected in detail. You can readily see that the same exacting inspection applied to our work trains when we begin to haul rock and other materials for the dam will cause such delay as to endanger the work in progress.

It is of little service to quote to me the promises of the officials in Mexico City. The only thing that would be of any use would be instructions to the local Mexican officials of such character as to permit us to handle everything that is necessary for use on the work without close scrutiny. They should be instructed to accept consular invoices and my certificate as representing in all necessary detail the character and value of article submitted for entry. Unless this can be accomplished it is evident that serious delays must continue.

Very respectfully,

J. A. OCKERSON,
Engineer in Charge.

The situation at the Algodones customhouse, which is the port of entry to Lower California, Mexico, in which State all the work lies with the exception of the quarries, was such as to practically prevent the entry of material and equipment, and at the Sonora line, where it was necessary to enter contractors' equipment to reach the work below the Abejas River, there is no customhouse, and no satisfactory arrangement could be made with the Mexican officials to admit contractors' equipment, although repeated assurances had been received that all formalities had been waived.

Finally, on January 1, 1911, the following instructions were received from the City of Mexico authorizing:

First, creation of branch customhouse at the point of importation from Arizona into Sonora; second, pending formal establishment of such branch customhouse, officers will be specially detailed from Algodones to pass equipment waiting at international line, the Mexican Government to be reimbursed for the extra expense incurred in establishing such branch customhouse and special detail; third, that work, including transportation across international line, may continue night and day and during holidays; fourth, gondolas and open cars containing rock and earth for construction will be passed without minute inspection; fifth, pending submission to and anticipating favorable action by Congress, materials and equipment, including fodder for animals employed on works, will be admitted free; sixth, customs officers of the Mexican Republic at the respective places of importation will be instructed to cooperate with those in charge of the work to expedite transportation across international line in every way practicable.

Through some unexplained delay the formal exchange of notes was not consummated until December 24, 1910.

In order to expedite the matter of passing goods through customs Messrs. E. O. Calderon and S. Escalona were dispatched by the treasury department of Mexico to supervise the customs inspectors. They arrived early in January and immediately proceeded to establish such regulations as greatly facilitated the entry of all kinds of material and equipment, and from and after that time the matter of customs was satisfactorily handled and no material delay was experienced in entering such articles as were required for the prosecution of the work. In the early stage of the work the customs regulations were doubtless more rigid than usual on account of the unsettled conditions in Mexico, and as Algodones, our port of entry, is a small station on the frontier, the local officials naturally had no discretion as to waiving the strict letter of the law, and the delays incident to securing modifications such as would practically eliminate the border line naturally required that the Mexican Government should have a full understanding of the purpose of the work before conceding all the demands made, but when once understood and settled the restrictions so embarrassing as to practically prohibit the work soon vanished.

All material, equipment, supplies, etc., were passed through the line on consular invoices, accompanied by a certificate of the engineer in charge. Trains of material were allowed to pass to and fro at any time, night or day, without inspection. Under this plan, in systematic operation, no further difficulty was experienced.

On the American side the following instructions to collectors of customs cleared the way in a satisfactory manner:

WASHINGTON, D. C., *December 10, 1910*

J. A. OCKERSON, *Yuma, Ariz.:*

Secretary Treasury just advises as follows: "Collectors of customs at Nogales, Ariz., and San Diego, Cal., have this day been authorized to permit materials, tools, equipment, and supplies intended for use in construction of such works to pass and repass the Mexican boundary without requiring formal entry thereof to be made or the payment of duty thereon." Reference being made to levee work on Colorado River, you will act accordingly.

BALLINGER, *Secretary.*

In compliance with the requirements of the Government of Mexico for the prosecution of the work along the west bank of the Colorado River, an instrument was executed in the city of Los Angeles, Cal., on the 9th day of December, 1910, by and between the Colorado River Land Co. (Sociedad Anonima), organized under the laws of the Republic of Mexico, and having its domicile in the judicial section of Mexicali, in the northern district of the Territory of Lower California, Mexico, as the party of the first part, and J. A. Ockerson, a citizen of the United States of America, by profession a civil engineer, resident of the city of St. Louis, Mo., which provides that:

In order to cause the performance of said protective work in conformity with the desires of the President of the United States of America and the President of the United States of Mexico, in a lawful and practical manner, the party of the first part herein hereby appoints said J. A. Ockerson, the party of the second part herein, as its true and lawful attorney in fact, in order that in the name and as the act and deed of the party of the first part herein he, together with his assistants and employees, may enter upon the land of the party of the first part herein, situated in Mexican territory, and do all things of whatsoever nature which in his discretion may be requisite and necessary in the matter of the construction of said levee and its appurtenances; also, in order that he may enter into contracts of every nature which in his discretion may be requisite and necessary for the construction of said protective work; and, finally, in order that he may do all things, perform all acts, and execute all contracts of every nature which in his discretion may be requisite and necessary in the premises, all to the end that said protective work may be commenced and completed at the earliest date possible in conformity with the plans and specifications. * * *

That all acts of the party of the second part herein within Mexican territory, in pursuance of the authority herein granted, shall be performed with due regard and respect for the laws and customs of the Government of the United States of Mexico and the wishes of its chief executive. * * *

The importance which the Mexican Government attaches to the performance of the work by a Mexican corporation is set forth in a letter from the Mexican commissioner, F. B. Puga, which objects to any allusion in any document or contract relating to the work which recognizes the Government of the United States in connection therewith. This attitude is further emphasized in the following extract from letter of Commissioner Puga:

The fact that the funds with which you are to execute the work emanate from or are provided by that Government (United States) should be absolutely ignored in all the documents that may be drawn up in conjunction with it, in the same manner that it has been treated by our secretary of relations when it consummated, with the department of the United States, the change of notes that put an end to the diplomatic gestion of this matter, and caused it to pass to the category of a private Mexican enterprise, subject in all to the laws and rules of the Government and of the secretary of the interior of Mexico. For these reasons it is not proper that the contracts that you may enter into be signed by the Secretary of Interior of the United States, nor the American Government, nor should its employees have anything in common with the payment of duties in Mexico, nor can you compel contractors to receive and house employees of the American Government that may appear in any official capacity, nor should any of the contractors do this without previous permission from us. Your official capacity in Mexico is not, nor can it be, as I told you in my letter of the 14th December, only that of the engineer in chief and representative of the Colorado River Land Co., in charge of the construction work which that company does in our country with the permission and authority of our Government. You are, of course, at liberty to hire all your employees without inquiry from the secretary of interior, or question as to who they are or what salaries they should receive; but these employees never can be accepted nor considered here as clerks of any political department of your country, as this would be aside from the different suggestions that the secretary of relations has made and makes to effectuate the dispatch of different questions covering this matter in the other departments of this Government—suggestions that are owing to considerations of courtesy toward your Government for initiating this work. There does not exist any official relation between the different officers of a State in the United States and those of Mexico; these are, at least, the instructions I have received in my capacity of inspector to the minister of interior for the work that the Colorado River Land Co. is doing in the Colorado River in Lower California and Mexico.

This is further emphasized by letter from the Mexican secretary of state, which recites as follows:

A matter in which we have had some difficulty concerns the mistaken interpretation which has been given to the authorization of the Mexican Government to carry on these works. The Mexican Government has special reasons of a constitutional nature to insist that the authorization be given to a Mexican company and not to the Government of the United States, since for the first there does not exist any difficulty in our legislation, while for the second there would have been necessary a treaty to be approved by the Senates of the two countries, and as that of Mexico is not in session, it would have been impossible to give legal force to this treaty, and the opportunity for the execution of the works would have passed.

The result is that the authorization given to the Colorado River Land Co. has, by agreement of the two Governments, left the Government of the United States completely out of it, since the works must be carried out on Mexican soil; and in all relations with said works no employees of the United States

Government are to intervene, nor can they bring any questions before the Mexican authorities, nor can there come up in the expediting of this work any matters whatever or any promotions of any sort except those relating to the company which you represent.

As you know, the relations of Mexico with the United States are very friendly, and all international and diplomatic affairs are going on smoothly between the two Governments; but in this matter the form of authorization has been strictly defined, and we must respect it in order not to incur any dubiousness or misunderstanding which might lead to future complications.

I permit myself to make these declarations so that your company, neither in any powers which it may grant, nor in any of its future negotiations with the Government of Mexico, nor in any of the acts of itself or agent, make any reference to or avail itself of arrangements made by the Government of the United States, but these be considered applicable only and exclusively to work done on American territory and in no manner to those carried on in Mexican territory.

I desire that you fully understand the motive of these observations which must be set forth with absolute clearness to facilitate proceedings, and at the bottom of them lies the most wholesome intention, to avoid that any misinformation should get out making the United States Government figure in this affair, to which no other form has been given but a concession to a Mexican company, subject to the authorities and legislation of the Government of Mexico, and independent, "Por completo" of the Government of the United States.

In strict compliance with the wishes of the Mexican Government in regard to this matter, the following instructions were issued by H. G. Otis, president of the Colorado River Land Co., to insure that all persons connected with the work should comply with the requirements of Mexican law:

All officers of this company, and all persons in its service, directly or indirectly, are hereby called upon to give their special attention to the following instructions governing the work which this company has undertaken on the Lower Colorado River, in the Republic of Mexico, and to the conditions to be observed by this company in the performance of that work, which can not be done save with the consent of the Mexican Government.

The following points must be especially noted and observed by all concerned:

First. This company is a corporation operating under a Mexican charter exclusively, is therefore a Mexican company, in the eye of the law, and not an American company.

Second. It is empowered, under an agreement between the two countries, to execute the pending work of restoring the Colorado River to its natural channel, thus preventing its overflow and the destruction of property along its banks.

Third. The terms and conditions under which it is operating in this particular spot have heretofore been authoritatively laid down; and all persons in its service, whether officers, employees, contractors, or others, are to look to this company alone for their orders, instructions, and compensation.

Fourth. All persons concerned in the work, no matter what their position, rank, or station may be, are enjoined to bear in mind the fundamental fact that the work is being done on Mexican soil, and that the wishes of the Mexican Government, as expressed in negotiations heretofore had, shall be respected in every particular, in order that no cause of complaint may arise by reason of any infringement upon Mexican territory or laws, or upon any rules and regulations applicable to the territory, and also that reciprocal protection to the contractors and workmen engaged in this project may be assured.

Fifth. For the purpose of more particularly describing the terms and conditions which have been heretofore agreed to on both sides touching this work, the following summary of the official instructions of the Mexican Government is here made.

(1) In a letter from the secretary of foreign relations of Mexico, addressed to the president of this company, dated January 3, 1911, he lays stress upon the following points, to wit: That the particular manner in which this company has been authorized to execute the work is understood and is without objection; that the execution of the work on Mexican soil and by a Mexican company is feasible and acceptable to the Mexican Government, provided it shall be carried on by this company alone, under supervision of the two commissioners, one on the part of the United States and the other on the part of Mexico, who have

heretofore been agreed upon through diplomatic negotiations; that in this matter the form of authorization has been strictly defined and must be respected by both sides in order to avert any possible misunderstanding which might lead to future complications; that this company, the undertaker of the work, is alone to be looked to for its execution; and that the only exception to this stipulation or prohibition is in relation to that portion of the work done or to be done on American territory.

(2) The other point to be especially observed is that at the bottom of the negotiations leading up to the beginning of this work, the Government of Mexico is disposed to show the most friendly and wholesome intention toward it, and is only concerned with the matter of the possible dissemination of misinformation which might lead to embarrassment. And, finally, that this company, in the prosecution of the work it has undertaken, is subject to the authority and legislation of the Government of Mexico.

(3) By intelligent and faithful observance of these instructions, the work will be facilitated and much good done to the country and to the large number of people and the important interests concerned on both sides of the international boundary line.

Thus it will be seen that the inauguration and execution of the work throughout, where the United States appropriated money for an important work in a foreign country, the benefit of which chiefly accrues to citizens of the United States, is wholly without precedent. For this reason a brief summary of a large mass of correspondence has been given in order that the situation may be fairly well understood. On January 29, 1911, the insurrectos sacked Mexicali and took possession of the customhouse, and have effectively held that position up to this date. At the same time Algodones, our chief port of entry, was threatened, and a request for American troops was made with a view to preventing any interruption of the work in Mexican territory.

The threatened attack on Algodones did not occur until February 21, 1911, when one of our work trains was seized by a body of armed insurrectos at a point some 5 miles distant from Algodones. The telegraph and telephone wires were cut, and under orders from the insurrecto leader the train proceeded to Algodones with this armed force, which, on reaching the station, immediately opened fire on the customs officials, killing one and wounding another, the others escaping to the American side of the line. The customhouse and all its records were destroyed by fire and the insurrectos took possession of a freight house near by and remained in that locality until early in April, when they suddenly departed westward. This station is located but a few hundred yards from the quarters constructed for the use of our forces at Pilot Knob quarries at Andrade.

From that time on until early in April the insurrectos were a menace to the work. They invaded contractors' camps, plundered the stores, and stole mules and equipment. They frequently took possession of the work trains for their own use, sometimes being absent an entire day, all of which was a serious hindrance to the critical work at the dam then in progress.

As it appeared that the American forces would not be permitted to enter Mexican territory even to protect this work, an appeal was made for protection from some other available source.

A Mexican force of 200 men from Ensenada, Lower California, under the command of Gen. Vega, was promised, but on reaching Mexicali they were utterly defeated and routed by the insurrectos. The presence of the insurrectos and the absence of any means to control them created a panic among the contractors and their laboring forces, and in the absence of any possibility of aid from the American troops or from the Mexican authorities it was suggested that a force be organized, armed, and equipped for the purpose of protecting the work.

The Mexican secretary of state therefore—

> authorized the organization of a corps of police to protect the properties accumulating in the bank of the Colorado River and get along the works in the same. I beg to advise you that under this date (Feb. 22, 1911) the department has advised the president of the city council of La Ensenada, acting jefe politico, that the above-mentioned company (Colorado River Land Co.) is authorized to organize such corps of police as it requests for the protection of its properties.

Under date of February 19, 1911, the writer was informed by the Secretary of the Interior that the Mexican Government proposed to send 300 soldiers immediately to protect the work, but considerable time would necessarily elapse before their arrival. In view of the urgent necessity for protection the writer was authorized to equip an armed nonuniformed force in numbers sufficient to afford adequate protection to the works in course of construction.

In further consideration of the matter of protection, in view of the fact that no Mexican magistrate was accessible for a distance of 200 miles and the arrest and trial of offenders would be impracticable, it was thought best to abandon the idea of a civil posse. Furthermore, as the insurrectos were daily gaining strength and the lack of opposition had made them more exacting and insolent, but still without any direct injury to the work itself other than previously mentioned, it seemed best, on the whole, to avoid anything like an organized force, particularly a Mexican force, which would invite attack, and in order to be effective would necessarily mean defensive measures on a large scale.

In fact, the insurrectos declared that they would not interfere with the work unless Mexican federal troops were sent to guard it, in which case they would certainly attack and attempt their defeat. The threat of the insurrectos to kidnap the engineer in charge prevented his giving that personal attention to the work at the Abejas River which it required, as no protection could be looked for from either Government.

On the 16th of April, 1911, Col. Miguel Mayol, with some 400 Mexican troops of the Eighth Battalion, arrived at the Abejas River and went into camp. En route to this point they were attacked by insurrectos near Mexicali and a sharp engagement, lasting throughout the day, occurred. The insurrecto commander, Stanley, was killed, and a number of men on both sides were killed and wounded, and the insurrectos were repulsed. Col. Mayol's orders, however, were to report to the writer at the Abejas Dam, and he proceeded to carry out his instructions without further conflict. He was relieved from duty at the Abejas River on May 10, 1911, on account of the suspension of the work, and his forces were removed to the vicinity of Algodones, where he established a camp.

Claims have been made by the several contractors for loss of property taken by the insurrectos. These claims have been submitted to the department for such settlement as may be found proper.

During the interval following the formal report of October 4, 1910, the necessary estimates were made for equipment, material, and various appliances for the vigorous and successful prosecution of the work. The President having directed that the work should be pressed to completion as rapidly as possible, the most important feature being the closure of the break and the diversion of the Colorado to its old bed, the early construction of the railroad was imperative. This road was projected from a point on the California Development Co.'s line 15 miles below the heading at Hanlons and extended to Abejas River, a distance of 7½ miles. The clearing and grubbing of the right of way began with a force of Indians early in December, and grading followed with teams and equipment procured on the Mexican side of the line. On January 8, 1911, a track gang arrived at the work and proceeded to lay the track, which was completed to the Abejas River on the 4th of February, 1911, when the force was dismissed and returned to the Southern Pacific Co.

In order to facilitate communication a telephone line was constructed connecting Yuma with the camp at Andrade and from there to Abejas River. A portion of the line along the California Development Co. levee and also a portion of the United States Reclamation Service line was used in this connection.

The question of securing suitable water for boiler use was somewhat difficult to solve. Analyses were made of available sources of supply and a site was finally selected about 5 miles below Andrade, where water filters through the Colorado River break of 1905. This water proved to be quite satisfactory, and a pump and engine were installed and suitable tank and standpipes were erected so as to facilitate the supplying of engines and water cars. This water supply has proved eminently satisfactory, and but little difficulty has been experienced in its use for all purposes. The domestic water supply at Andrade was furnished without charge from the plant of the California Development Co.

In order to operate at night a large equipment of suitable lights for illuminating the quarries and the work at the dam were procured. This equipment consisted of eight 5,000-candlepower Milburn lights; and 7 tons of carbide were purchased for use in connection therewith. These lights proved very satisfactory and permitted the prosecution of the work at night with little inconvenience.

Bids for levee construction were opened on November 25, 1910, in conformity to an advertisement published in sundry newspapers in several western cities. Six bids were received, as shown on the appended abstract of proposals. Owing to the attitude of bonding companies, which declined to act as sureties for contractors, considerable difficulty was experienced in concluding the letting to responsible bidders.

The work was finally awarded to J. H. Maxey from station 0 to 470, 436,662 cubic yards; to John Mulligan from station 602 to 1000, 410,924 cubic yards; and to J. C. Norton from station 1000 to 1300, 264,236 cubic yards. From station 470 to 591 (Abejas River), 146,129 cubic yards, the work was done by W. K. Bowker on force account. A wasteweir of 20,000 cubic yards was also excavated, making a total of 2,277,984 cubic yards of earthwork.

There was also 200 acres of grubbing and 613 acres of clearing; 1,300 men and 2,100 animals were employed on the levee work, the labor consisting of Americans, Mexicans, Cocopah Indians, Hindus, and Chinese. The entire levee was completed in 70 consecutive working days. The total cost, less customs, was $432,434.76.

Informal agreements had to be made in some cases, as the limited time would not permit of readvertising the work. The specifications for levee construction followed, in a large measure, the prevailing practice on the Mississippi River for many years. It provided, in general terms, for a levee with a crown of 8 feet, with slopes of 1 on 3, with a grade line of 5 feet above extreme high water; berm 40 feet in width and traverses 50 feet wide across the borrow pit at intervals of 400 feet. A muck ditch of sufficient depth to reach through the cracked adobe soil, sometimes 12 feet below the surface of the ground, which occurs in places along the Colorado River, was required along the entire length of the levee. It was also provided, in accordance with the best practice in levee construction, that the borrow pits should be on the river side of the levee. This practice has been followed in all of the United States Reclamation Service levees along the Colorado River and a large portion of the levees built by the California Development Co. The principal advantage of this method of construction was fully illustrated in the break occurring just below the first Southern Pacific closure, where the borrow pit was on the land side, and the water percolated through the cracked soil under the levee, and when it reached the borrow pit, following along back to the channel, which had just been closed, and in a short time the entire river was again on its way toward Salton Sea. The location of the borrow pit in this case is recognized as the prime cause of failure of the Southern Pacific closure.

All of this work was completed before the 1st day of April. The work below the Abejas River, owing to the difficulty in crossing the Sonora line, was not begun until the 8th of January, 1911, and even the work north of the Abejas, which was begun on the 19th of December, 1910, was abandoned until about the 1st of January, owing to the difficulty in getting tools and supplies through the line to the forces at work.

An engineer and five inspectors were employed on the levee throughout its construction and an exceptionally good result was secured.

The clearing and grubbing from station 219 to the Abejas River was done by force account, the details as to cost of which is set forth in a statement appended hereto.

The necessity of protection for a new levee from the first high-water season was fully recognized. In fact, even levees of old standing require considerable attention during the period that water stands against them. It was intended from the beginning that brush tapoons should be placed at frequent intervals along the river side of the levee in order to deflect the current away from the base where erosion might set in and threaten stability of the levee. The demoralized condition of labor and the hasty exit of the contractors at the conclusion of their respective contracts prevented the execution of this work. It was, however, intended that it should be done prior to the advent of floods, and on April 6, 1911, the following telegram was addressed to the Secretary of the Interior, to wit:

YUMA, ARIZ., *April 6, 1911.*

SECRETARY OF THE INTERIOR,
Washington, D. C.:

While the construction of the levee has been completed and the closure of the break seems probable, it will be necessary to organize a force to patrol the work until the low-water season in order to insure its safety. This will be done unless directed otherwise.

OCKERSON.

And the following reply was received:

WASHINGTON, D. C., *April 8, 1911.*

OCKERSON,
Engineer, Yuma, Ariz.:

Responding your wire 6th concerning repair and maintenance of levee until low-water season you will on completion of work of construction leave the works in good order. No authority under appropriation or negotiations with Mexico for maintenance. After completing parties beneficially interested will no doubt patrol and maintain the levee.

FRANK PIERCE,
Acting Secretary.

The parties interested in the protection of Imperial Valley were at once notified that no protection work could be done. No response has thus far been received.

As the result of this lack of protection the levee south of the Abejas River was breached by water which escaped over the bank, due both to the increased height of the water caused by the dam and also to the high stage of the river itself. At the present time several miles of this levee is seriously damaged or totally destroyed. About 7 miles at the lower extremity remain intact. Owing to the inaccessibility of the region in which the breaks occurred and the impracticability of securing teams and the necessary labor, restoration of the broken parts could not be carried out and the levee in that section must be abandoned until the low-water season. The extent of the damage done can not be fixed until the flood season has passed. The portion of the levee north of the Abejas River has been protected with brush tapoons, and, in accordance with instructions of the Secretary of the Interior, dated May 15, 1911, a force will be organized to patrol and care for this part of the levee and the dam throughout the high-water season.

The crossing at the Abejas River required a fill across the sand bar at north approach, averaging 4,100 feet long and 12 feet high, and a trestle across the stream 1,017 feet long. Work on the approach was begun on December 16, 1910, and completed January 16, 1911.

The rails were laid to the Abejas, and the pile driver, trestle material, and tools reached there January 18, 1911. The driver was erected at once and pile driving began on January 21, 1911. The boiler proved defective and a delay of three days occurred before the defects could be remedied, owing to lack of facilities on the ground and great distance to the nearest base of repairs.

The trestle consisted of bents of four piles, spaced 15 feet between centers, and minimum penetration was fixed at 20 feet and generally exceeded that amount. The tops of the piles were sawed off and a 12-inch cap, 12 feet long, drift bolted thereto. Across these caps were four stringers, 8 inches by 17 inches by 30 feet, to carry the ties and rails.

After numerous delays for repairs to defective parts of the driver equipment, the last bent was driven on February 2, 1911. The decking was completed shortly thereafter and the track laid thereon.

Rock dumping began at the north end for shore protection on February 2.

In the meantime work at the quarry was progressing. The material was loosened by drilling from the top, the face of the quarry being from 20 to 30 feet high. Two 2½-yard shovels, a dinkey engine, thirty-five 8-yard side-dump cars, derrick for loading large rock, centrifugal pump and gasoline engine for water plant, and other minor equipment had been secured from the United States Reclamation Service at Laguna.

On January 2, 1911, two 5-yard steam shovels arrived at the quarry from the Southern Pacific Co. Owing to the destruction of one of these shovels by fire, another shovel of large capacity was secured from the same company for the last few weeks' work. This shovel was a coal burner, which made its operation expensive, as freight on coal to this point was charged at from $12.25 to $18.75 per ton. The same company had also supplied two track drivers with their equipment, one of which was returned at once, and a skid driver borrowed from the California Development Co. was substituted therefor. This driver completed the first trestle, as noted. The pile-driver crews were Southern Pacific men, as were also the train crews and the crews of the two large steam shovels.

Additional equipment from the railway company comprised 83 battleship cars of 40-yard capacity, 2 switch engines, and 4 road engines, flat cars, water cars, and bunk cars.

Fuel oil was used on all the large plant, with the exception of the pile driver, which required coal.

Two switch engines were kept at the quarries to spot the cars for the quarries, three engines on the road hauling trains of 15 to 20 cars, and one engine at the trestle to run the cars out, unload, return them to the passing track, and close the doors ready for the return train. One of the engines was practically out of commission for repairs all of the time.

Frequent accidents to the shovels occurred and broken or extra parts could only be replaced by sending to the factories in the East as far as Paterson, N. J., and long delays therefor naturally ensued, even when deliveries were ordered by express.

In preparing plans and estimates for the work, rock delivery at the trestle, some 23 miles from the quarries, was fixed at a minimum of 150 cars per day. In practice that number was never reached, the deficiency lying in disabled shovels or shortage in rock supplied by the quarry gang.

In explanation of this, it should be noted that the labor situation was very unsatisfactory, and the method of quarrying from the surface proved to be inadequate to the demands. Later the tunnel system was substituted, with tunnels at right angles to the face of the quarry extending into the rock a distance equal to the height of the face with a tee at the end, which was loaded with explosives. The entrance was closed with rock and sand bags and several tunnels were exploded at one time with batteries. In this way from 30,000 to 50,000 cubic yards were loosened, ready for the shovels, at a single shot.

The large rock were chained to the shovel dipper and loaded on flat cars. Although proper care was exercised to prevent large rock from getting into the dump cars, loads were often found with some rock too large to pass the doors, and these had to be shattered by the use of dynamite. Serious damage to the cars themselves only occurred from the careless use of the explosives.

By February 5, 1911, rock dumping had covered the whole width of the river, care being taken to distribute the rock evenly over the entire width so as to avoid congesting the flow and give a wide spillway of moderate depth. In practice this was difficult to realize, owing to the very rapid shifting of the bottom, so that while the development of a washout in one place was being checked another would develop at some other point. Then, too, the middle of the river for some distance was practically dry, which placed the base of the rock fill over this stretch at a higher plane than the channels on either side, and consequently made it more liable to attack.

The prospect of an early successful closure seemed assured when a sudden rise from the Gila and Colorado Rivers occurred on February 7, 1911, which was accompanied by large quantities of drift, and five trestle bents near the south end were carried out and three others badly wrecked. The entire force was required for a few days to handle the drift to prevent general destruction of trestle. Another rise occurred on the 10th, carrying out several more bents, and the north end was also threatened, but was successfully held. On the 8th a driver was put to work on the north side of the break, and on the 11th the skid driver began operations on south side of break.

A discharge of 23,000 second-feet was reached on the first rise, which was increased to 26,000 second-feet on the second rise.

In anticipation of difficulties of this sort an extra supply of piling and bridge timbers had been provided with the first order and was on the ground available for immediate use.

There was a total loss of 11 bents with 4 others badly wrenched. The current was very swift and whipped the piling about in a very dangerous way, resulting in disabling one driver, and another driver was promptly secured to replace the track driver, which was in constant danger of going into the river.

Piling and timbers from the weir trestle at Hanlons contributed materially to the damage. The removal of this trestle had been ordered by the Secretary of War and the débris was allowed to float down the river. A vigorous protest was made against this, as it threatened the destruction of the Abejas trestle. This work was deferred for a short time, but later resumed, resulting in the wrecking of trestle bents and loss of pile driver and drowning of one man at the Abejas.

The flood gradually subsided to 13,000 second-feet and the gap in the trestle was closed on February 17, 1911, and the ground lost was soon regained, the gap being under complete control, although the break had scoured out to a depth of over 30 feet.

In the meantime the channel, which, when the work began was divided into two parts, now mainly flowed through the break, following along the upper side of the trestle for its entire length, which for some days threatened its destruction, but it was saved by a large amount of rock, which was dumped over the entire length. In order to save this portion the rock was carried well up, resulting in the development of two spillways and the final control of the break at the south end left one spillway near the north end of the trestle. The central portion had never acted as a spillway, as it was a dry bar when the work began.

In filling the break during the flood large rock, upward of a ton in weight, dumped from the cars, were carried downstream over 200 feet.

Dumping continued with promising results until it seemed that complete closure was within a few days' reach. By the end of February 1,300 carloads of rock had been dumped, and a difference of 6 feet in water level above and below the dam had been reached.

At 3 o'clock on March 3, 1911, the difference in water level at the Abejas River dam was 7.2 feet, and a large proportion of the Colorado River was flowing down the old bed.

The structure seemed in every way substantial and the final closure appeared near at hand. Suddenly, without the slightest warning, seven bents at the north end gave way and the impounded water rapidly escaped, leaving a break 185 feet wide.

Underlying quicksand probably caused the break, as it came in the nature of a blow-out from below the piling, which were driven with a penetration of 23 feet, which is considerably deeper than that used in previous closures of the river.

Pile driving was resumed, but defective boilers, two in succession, had to be replaced, and finally, for lack of other means, steam was piped to driver from a dinkey engine at north end of trestle. These defects seriously hampered progress, and a rapidly rising river made the work difficult and slow.

On the 8th of March all but one trestle bent required to close the gap had been driven. Heavy drift and increasing volume necessitated the employment of all hands in the removal of drift. An eddy of very large proportions developed on the upstream side of the approach and threatened its destruction by erosion, although heavily covered with stone. This was aggravated by active bank caving several hundred feet above the dam. It was the intention to protect this bank as well as the bank below before any work on the dam began, so as to prevent erosion, but the total lack of floating plant on the river and the brief time available after the beginning of the work was permitted prevented the execution of this much-needed work.

An eddy of immense size developed on the lower side of the north approach, which required most active work in order to prevent wrecking the tracks. For two days the ground was held in the face of a rising river, the whole volume flowing through an opening 185 feet wide occupied by 11 trestle bents. The dinkey engine supplying steam to the pile driver had to be quickly removed in order to save it from going into the river. One "battleship" car slid over the bank and was lost.

On the morning of the 13th of March, at 3 o'clock, a raft of drift, composed of piling and other débris from the California Development Co.'s weir at Hanlons, struck the piling bents, wrecked 5 of them, and dumped the pile driver into the river with 2 men who were engaged in repairing the boiler. One of the men was drowned, the other escaping by swimming ashore.

A defective track driver was put in operation near the shore to restore the ground lost by the effect of the eddy.

By March 14 the discharge at Yuma had reached nearly 40,000 second-feet at the maximum. The river began to fall at the dam, but the activity of the lower eddy continued to make inroads on the embankment approach in spite of large quantities of rock and sand bags which were placed as rapidly as possible. The total loss covered a length of about 500 feet, which was restored by new trestle and rock work. Material therefor was ordered from Los Angeles, sufficient material being on hand to keep the driver busy until a new supply was brought in.

Owing to lack of floating plant it was impossible to do any work in the eddy itself to break up its activity.

The remaining pile driver on hand was not suitable for work in deep, swift water, and another driver was secured from San Francisco, which was shipped on March 18 and arrived at Andrade six days later, and pile driving was resumed March 28, 1911.

Piling 65 to 70 feet long and other trestle material had been ordered and were on the ground when the driver arrived.

Water in the break was about 300 feet wide and the maximum depth over 40 feet, the volume of water ranging from 17,000 to 22,000 second-feet.

The recession of the shore on the upstream side of the trestle approach required a large amount of rock protection to prevent a breach. With the water raised a small amount the difficulty above the dam disappeared, but increased its activity below. A large portion of the force was occupied in taking care of the drift and protection of the approach.

Work progressed steadily on the dam, with frequent losses due to slides. As the head increased the velocity over the crest of the dam became correspondingly great, and rocks of moderate size were carried far below the dam, much of it reaching a distance of 400 feet. As a result of this the crest of the dam could not be raised, although rock was dumped at a rapid rate, only to disappear in the pool below.

The supply of large rock at the Pilot Knob quarries was limited, and on April 16, 1911, a contract was made for large rock from the Declez quarries, distant 195 miles west; rock ranging from a minimum of 1 to a maximum of 5 cubic yards, approximately 4 to 10 tons each. The first delivery was made April 19, and 10 to 12 cars were to follow each succeeding day up to a total of 100 carloads, or more if required. The contractors, however, failed to deliver the rock in the quantities required, and their contract was canceled on May 1, 1911, after 1,592.85 tons were delivered, at a cost of 75 cents per ton at the quarries.

When the site of the dam was selected and the work was planned it was thought that when the water surface was raised to a height of 85 feet above sea level, which coincided with the height of the natural bank south of the dam and stood 4 feet above the entrance to the dry bed of the Colorado, scour of this bed would immediately occur and the flow be readily diverted to the former channel.

It was not believed that an elevation above 85 feet would or could be reached by the backwater from the dam, assuming the closure to be made during low water, but in order to bring the left bank up to the average height of the right bank a slight embankment was thrown up from the south end of the dam northward.

The scour in the dry bed of the Colorado was, however, very disappointing. While a flow of half the volume or more had been estimated, actual measurements on April 18, 1911, showed only 10 per cent, although the water had been flowing down for some weeks. The larger portion of this flow was confined to the wasteweir, which was dug before the closure began. Under low-stage conditions it would have been practicable to hold the dam as a weir at such height as would not overtop the banks and still give sufficient head to induce flow down the Colorado and ultimately restore its channel capacity.

On April 21, 1911, the protection levee along the south shore was overtopped and the water rushed down the steep slope, damaging the levee as heretofore described.

The river continued to rise, and the safety of the dam with twenty to thirty thousand feet flowing over it made it necessary to complete the closure which would flood the lands to the southward and probably damage the unprotected levee or abandon the closure and lose the dam.

The closure of the dam seemed to be the most important, and work was continued in the most vigorous manner, resulting in the final completion of dam on May 15, 1911, to a height of 95 feet above sea level, with a crown of 20 feet. About 4,000 carloads of rock were dumped at the dam and approach thereto.

On May 4, 1911, actual measurements showed that the Colorado discharge down the old bed had increased 33 per cent of the whole volume, or about 9,000 second-feet, with 8,000 second-feet going down the levee, the total flow at Yuma being 27,400 second-feet. So it seems evident that the capacity of the Colorado southward is rapidly increasing, but unfortunately this increase has been too slow to make the diversion effective, although dynamiting on a considerable scale was resorted to.

It was well known that the upper reaches of the dry bed had been materially depleted by deposits induced by the Abejas River outlet, but the resistance to erosion was much greater than expected.

The river continued to rise, but for two weeks the Abejas River carried but a trifling amount of the flow, the overbank water reaching the pescadero and down the Hardy to the Gulf of California. The discharge down the old bed of the Colorado continued to increase, but did not keep pace with the increasing volume.

On May 16 the water began flowing into the Abejas at the south end of the dam, and the rapid lowering of the impounded water caused a very rapid flow along the upper side of the levee and dam, which resulted in violent eddy action north of the dam that finally breached the levee, and in a short time the flood volume was again flowing along the Abejas channel to the sea.

The immediate effect is shown in the elevation of Volcano Lake water surface. On May 14, gauge at west end of lake read 26.5; May 15, 26.6; May 16, 27.2; May 17, 30.2; May 18, 31.9.

Before congressional aid was requested a general outline of the work needed for the protection of Imperial Valley was agreed upon at a conference held in Los Angeles, composed of representatives of the Imperial Valley, the Southern Pacific Railway, the California Development Co., and others.

This outline was later developed by the writer into a definite project after a thorough investigation of the physical character of the region covered by the proposed improvement.

The project was submitted to the Secretary of the Interior and received the approval of that department. Construction work was entered upon under its direction and carried out as planned.

The extent of work required to make another closure and restore the controlling levee line can not be ascertained until after the floods have passed.

The tremendous amount of work required in the brief space of time from January to May was not conducive to economy; yet, considering the many unlooked-for obstacles which hampered progress, it is believed that the record is an exceptionally good one as to amount of work done and expenditures made therefor.

At a conference held November 4, 1910, at the White House in Washington, Mr. R. S. Lovett, president of the Southern Pacific Railway, made the following proposition as to the cooperation of his company in the Colorado River work:

SOUTHERN PACIFIC CO.,
New York, November 5, 1910.

Hon. R. A. BALLINGER,
Secretary of the Interior.

SIR: Confirming the understanding arrived at in conference with the president yesterday, I beg to say that the Southern Pacific Co. will furnish the Government, for use in the work designed to protect "lands and property in Imperial Valley, Cal.," pursuant to joint resolution passed at the last session of Congress, the following equipment, at the rates of rental named, viz:

	Per day each.
2 four yard shovels, at	$25.00
3 pile drivers, at	12.50
4 mogul engines, at	25.00
2 switch engines, at	20.00
75 steel-side battleship cars, at	1.00
20 flat cars, at	1.00
1 cook and 3 mess cars, at	1.00

These rentals do not in any case include the services of any employees, fuel, or supplies. We will furnish necessary crews for steam shovels, pile drivers, locomotives, and boarding cars at actual cost—that is, the wages paid the men, plus 5 per cent for supervision and administration expenses. We can not undertake to furnish any other labor. Neither can we undertake, as stated to Mr. Ockerson yesterday, to furnish the lighting plants requested by him, as we have none except those attached to wrecking outfits, but I am informed they cost very little, and that you can very easily buy them. Nor can we definitely promise at this time to furnish the nine water cars of large capacity requested, but I will pursue this subject further with our operating department and furnish them, if it is at all practicable for us to do so.

It is understood that we are to have at least 10 days', and if possible as much as 2 weeks', notice of the date when the equipment will be required, so as to enable us to assemble and deliver it when desired.

For the gravel that may be required from our Mammoth pit, necessary for closing the Abejas Channel, we will make no royalty charge, on condition that the pit tracks are kept in proper order and that the pit work is done in such a way that the pit is not unfit for our own use when the Government has finished its work; and on the further condition that the Government assume the expense of providing the necessary sidetracks, both at Andrade and at the pit, for receiving the loaded gravel cars and deliveries of the empties. Assuming that it is, or can be made, lawful, I will fix as a rate for transporting the gravel from Mammoth pit to Andrade 37½ cents a ton, the gravel to be loaded at the pit and unloaded by the Government and the cars to be furnished by the Government from the steel cars above mentioned, our services being limited to that of transportation with our own power and crews. The distance, I understand, is about 45 miles, and the rate mentioned is approximately 8 mills per ton-mile, and considering that the cars are returned empty, it is practically 4 mills per ton-mile, which, in view of the very short haul, is certainly not more than cost.

I understand that there is a quarry on our line, 4 miles from the junction with the tracks of the California Development Co., and that with the equipment above mentioned, or some of it, the Government desires to move rock over our tracks for the distance above mentioned. No charge for the use of our tracks for that purpose for the distance specified will be made, it being understood, of course, that the use of the tracks is to be under the direction of our dispatchers, superintendents, etc., and that the Government is to pay for any damage done by such trains.

I am not prepared now to say whether we have any second-hand rails and necessary fastenings or that we can furnish the ties for the laying of such rails, which Mr. Ockerson requested yesterday. I will ascertain and advise you as early as possible whether we can furnish such materials. Mr. Ockerson's request was to borrow such material, the Government to pay, however, the expense of loading and transporting it and of reloading and returning it when no longer needed, the limit of time being, in the opinion of Mr. Ockerson, less than 60 days. I am disposed to lend the rails upon the condition stated, the Government to pay for any damage, but ties would necessarily be considerably damaged by such use, hence I think that, if we can furnish them at all, the Government should pay us the cost of such ties, and we will repurchase them when the work is finished at their then value, if we can agree upon it.

Mr. Ockerson also suggested that there would be at Los Angeles and possibly at San Francisco materials necessary for the work which would require transportation, and asked whether such materials could be loaded on the cars to be employed in the work and moved to destination; and if so, what the rate for such transportation would be. I do not know where the cars now are or the points from which they will start. I think it would be better therefore not to attempt to move the Los Angeles and San Francisco material referred to by Mr. Ockerson in the cars rented, unless they should happen to be immediately available, but move it in any cars which may be most available at the time. Such material may be billed at the established rates, whatever they are, and when the amount and character of it are known and the charges for it ascertained, I shall be glad to take up the question as to what concessions in the published rates can legally be made and should be made, pursuant to the policy indicated in my statement yesterday—that it was not our purpose to make any profit in rendering the service the Government desires in this matter, but to be reimbursed what we believe to be the cost.

We should be reimbursed the cost of assembling the equipment to be furnished, some of which will have to be run long distances empty. This is especially true of the steel-side 50-ton battleship ballast cars, which are scattered all over the Southern Pacific and Union Pacific systems. Indeed, both systems combined have but 300 of such cars. I do not know at the moment where we are to get the engines. We need urgently every engine in the service to properly handle our traffic. But as stated yesterday, we will furnish the equipment desired by the Government, if it is to be found anywhere on our lines, at whatever inconvenience to ourselves, and will take that which can be spared with the least detriment to our service and which at the same time may be most accessible. I have been informed that some of the contractors who have been invited to bid have equipment of their own. If this can be employed and the Government finds that for this or any other reason we can be released from furnishing any portion of the equipment above mentioned, it will be a great relief to us.

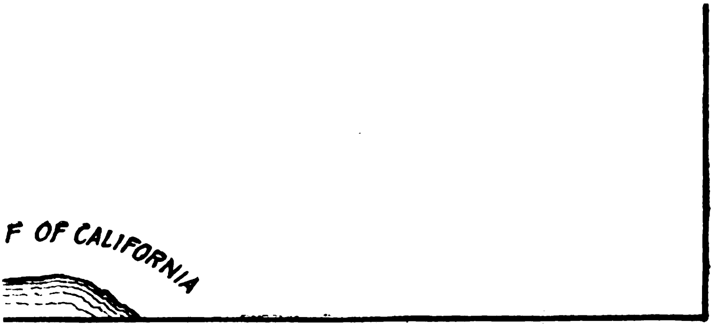
Bills are to be rendered by us monthly and are to be settled monthly out of the fund already appropriated by Congress to enable the President to carry on the work, it, of course, being understood that whenever the appropriation is exhausted the equipment is to be promptly returned to us and our services are to cease.

Very respectfully, R. S. Lovett, *President*.

The proposition was accepted, and in the prosecution of the wor request for plant and other aid received prompt attention.

W. H. Holabird, receiver of the California Development Co., ga his cordial support to the work throughout in the loan of plant, i the free use of some 15 miles of railway track, use of rails and ti in the quarry tracks, free use of the quarries from which the rock f the dam at Abejas River was obtained, and also free use of domesti water supply, which was piped to the quarters at Andrade.

The Colorado River Land Co., Gen. H. G. Otis, president, grante the necessary right of way through its land for levee and railwa and also made the work in Mexico possible through the use of i charter as a Mexican corporation, in accordance with the stipulatio of the Mexican Government.



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l alinement of works for the
aps supplemented by surveys
September, 1910.)

The United States Reclamation Service at Yuma, Mr. Francis L. Sellow, project engineer in charge, was very helpful in many ways, particularly in the loan of plants and tools, the use of its machine shops and mechanics, and the quarters provided for an office in Yuma.

Whatever good results may have been achieved must be very largely credited to the fidelity and energy of J. D. Fauntleroy, assistant engineer; J. G. Morgan, in charge of surveys and levee construction; J. C. Hering, special disbursing officer; R. W. Johnson, stenographer and clerk; and to J. W. Calvert, foreman at the Abejas Dam. To these men and their several assistants my thanks are due for their untiring efforts to successfully meet the many embarrassing situations which were frequently encountered.

Abstract of proposals, distribution of cost, and other data relating to the work are appended hereto.

Maps are submitted herewith showing the Colorado River as surveyed in the summer of 1910 and the levee and railroad constructed under this project; a cross section of the Abejas River crossing showing the length of piling and type of trestle; a hydrograph showing stage and discharge curves of the Colorado River at Yuma; and a general map of the Imperial Valley situation.

Respectfully submitted.

J. A. OCKERSON,
Engineer in Charge.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

Abstract of proposals received for construction of levee on west bank of Colorado River, opened Nov. 25, 1910, by J. A. Ockerson, engineer in charge.

Bidder and section.	New levee.		Clearing.		Grubbing.	
	Approximate yardage.	Price per cubic yard.	Acres.	Price per acre.	Acres.	Price per acre.
1. J. H. Maxey:[1]		*Cents.*				
0 to 100	107,781	19	50.30	$25.00	17.23	$50.00
100 to 200	77,158	20	50.22	25.00	17.22	50.00
200 to 300	77,137	21	50.22	25.00	17.22	50.00
300 to 400	99,825	22	50.22	25.00	17.22	50.00
2. J. C. Norton:[2]						
Any three, 0 to 700	....	32½	....	40.00	....	80.00
Any three, 700 to 1000	....	34	....	45.00	....	85.00
Any three, 1000 to 1400	....	38	....	50.00	....	90.00
3. A. C. St. John:[3]						
0 to 100	107,781	34	50.30	50.00	17.23	100.00
100 to 300	154,295	34	100.44	60.00	34.44	120.00
300 to 500	188,097	34	101.66	80.00	34.85	160.00
500 to 700	270,444	35	101.66	85.00	34.85	160.00
4. A. C. St. John:[3]						
700 to 900	143,172	37	100.44	80.00	34.44	160.00
900 to 1100	195,339	38	101.06	80.00	34.64	160.00
1100 to 1400	153,637	39	85.37	80.00	29.27	160.00
5. Shattuck-Edinger Co.,[4] 0 to 1400	1,212,765	50	640.93	50.00	219.72	175.00
6. W. K. Bowker,[5] 0 to 1400	1,212,765	51.3	640.93	60.00	219.72	250.00

[1] "Prepared to undertake 200,000 cubic yards." Certified check for $500 accompanying.

[2] "If stock, equipment, and supplies are duty free both ways, 5 per cent off on this bid. Bid is for earthwork, clearing, and grubbing altogether, or on earthwork alone, but not on grubbing alone." Checks for $,000 and $6,000 accompanying.

"Conditional upon duties free both ways." Guaranty accompanying.

Will not undertake less than entire levee work. Informal.

[5] Guaranty accompanying.

PAPERS TO ACCOMPANY LETTER FROM THE SECRETARY OF THE INTERIOR TO THE PRESIDENT IN RELATION TO COLORADO RIVER LANDS.

Department of the Interior,
Washington, June 1, 1911.

Sir: As you are aware, the United States has undertaken certain irrigation projects in connection with the lower Colorado River at or near Yuma, Ariz., and it is also interested in the protection of the lands and irrigation system in the Imperial Valley, in California

In connection with these matters, and due to floods which have heretofore occurred in the Colorado River below Yuma, which have overflowed into the Imperial Valley and the Salton Sink, the United States has undertaken certain engineering works for the protection of property in the United States from damage by overflow of the Colorado River.

During the past few months a dam across the Abejas River and connecting levees north and south of this dam, all in Mexican territory, have been completed at large expense to the United States Government. Considerable portions of these levees, however, have quite recently broken through and washed away by high water in the Colorado River. The appropriation for the construction and maintenance of these works has been practically exhausted, and it is necessary to determine whether their reconstruction is desirable; and if so, what modifications, if any, should be made in plans therefor.

For the purpose of procuring the best available advice upon the entire subject matter, and by authority of the President, I have called a conference of the following persons, who are interested in and familiar with the conditions:

Mr. F. H. Newell, director, United States Reclamation Service.
Gen. W. L. Marshall, consulting engineer, Department of the Interior.
Mr. J. A. Ockerson, United States engineer in charge of construction work on lower Colorado River.
Mr. J. B. Lippincott, civil engineer and aqueduct commissioner, Los Angeles, Cal.
Gen. H. G. Otis, president Colorado River Land Co.
Col. Epes Randolph, chief engineer, Southern Pacific Co.
Mr. C. F. Grunsky, civil engineer, San Francisco, Cal.

This conference will meet at the office of the United States Reclamation Service at 10 a. m. Friday, June 2, for preliminary discussion, and will continue its sessions as may be hereafter determined. for the purpose of presenting such advice as its members are able to give with regard to the adoption of adequate plans by the United States Government for the protection of property in the United States from damage by overflow of the Colorado River, south of Yuma, Ariz.

It is desired that the conference shall consider and make appropriate recommendations as to what works, if any, the United States Government should undertake for the purpose above stated, including the protection of property in the United States from such damage, if any, as may result from the overflow of the Colorado River into Mexican territory and thence into the United States.

In this connection it is suggested that the following questions may be among those entitled to consideration.

(1) Within what northerly and southerly limits will a breach in the levees or banks of the Colorado River certainly flow into the drainage areas of the Alamo and New Rivers tributary to Salton Sea?

(2) Within what limits will such breaches discharge into the lower delta of the Colorado River, and more remotely into the New River, or Alamo River?

(3) What is the best practical method, including character and location of structure for the protection of lands and property in the United States, for the prevention of—

(*a*) A break or crevasse in the levees that will cause a discharge directly into the Imperial Canal, thence through Imperial Valley and New River barranca into Salton Sea.

(*b*) A break discharging directly into the Paradones and thence into the New River barranca and Salton Sea.

(4) What remedial or precautionary works will prevent damage from a crevasse of either character above described by diverting discharge to the Gulf of California and away from Salton Sea until break may be repaired?

(5) What works are necessary and advisable to prevent crevasses south of limits of breaks of the above character and more remote and indirect damage to property in the United States—

(*a*) By backwater via Volcano Lake and New River into Imperial Valley.

(*b*) By "cut backs" or such material increase of slope as may cause the lowering of the bed of the Colorado River to such extent as to endanger the Yuma or Imperial Valley system?

(6) What, if any, arrangements should be made with the Government of Mexico as to the execution of such works, if any, as it may be advisable to construct in Mexican territory, at the expense of the United States, including works for the transmission of water from the Colorado River through Mexican territory and back into the United States?

It is desired that the conference shall meet with the President at the White House next Wednesday at 3 p. m., and that in the meantime it may give such consideration to the matters suggested above as will enable its members to present their opinions thereon for the consideration of the President.

Yours, respectfully,
WALTER L. FISHER,
Secretary.

Mr. F. H. NEWELL,
Director United States Reclamation Service,
Department of the Interior.

UNITED STATES RECLAMATION SERVICE,
Washington, D. C., June 7, 1911.

The SECRETARY OF THE INTERIOR.

SIR: In accordance with instructions of June 1, copy herewith, the members of this conference respectfully submit the following categorical replies:

(1) A breach in the west bank or levee of Colorado River if made at or within 10 miles south of the California boundary or north of

mile 18 below Yuma Bridge, as shown on map of J. A. Ockerson herewith, will result in water flowing directly into the drainage area of the Alamo and New Rivers, and thence into Salton Sea, which would be disastrous to property in the United States.

(2) A break in the river bank at any point between miles 18 and 55 below Yuma Bridge, as shown on said map, will result in spreading water over the delta of the Colorado River, with a flow into New River via Volcano Lake, menacing Imperial Valley.

(3) The best practical method for the protection of lands and property in the United States against a discharge directly into the Imperial Canal, and thence through Imperial Valley into Salton Sea, is to protect and maintain the levees as at present located for a distance of at least 10 miles south of the California boundary and to hold the river by adequate bank revetment practically on its present alignment.

(*b*) This levee, if extended to a point opposite the south boundary of Arizona, or about mile 27, will also prevent a discharge directly into the Paredones.

(4) As a remedial or precautionary work to prevent damage which might result from a crevasse directly into Imperial Canal or Alamo River, we have considered a secondary levee west of the river levees, with gates and sill across Imperial Canal, with large channels leading to the natural depressions, or diverting works conducting the water southwesterly into channels leading into Volcano Lake; but it is believed that the cost of any such secondary defense could be better expended in maintaining the main line of defense at the river.

(*b*) As a necessary defense against the northerly flow of any water reaching Volcano Lake, whatever be the treatment of the lower Colorado River, there should be an embankment well protected against wave wash on its south slope, constructed about on the line of the levees already built, extending from high ground north of Volcano Lake to a connection with the levees already built by the California Development Co. southwesterly toward this region from Colorado River. The top of this embankment should at its western end be not less than 10 feet higher than the rim land at Volcano Lake. This embankment is an essential requisite as a protection of Imperial Valley against menace from the south, and should be constructed without delay.

(5) The maintenance of the works constructed in 1906 and 1907, closing the breaks of the Colorado into the Alamo, and the maintenance of these and of the river levees since constructed as far south as the head of the Abejas, are essential requirements. Suitable arrangements for their repair and maintenance should be made with Mexico through the proper authorities.

We do not consider the immediate closure of the break into the Abejas and the reconstruction of the levees below the break as an essential to the protection of property in the United States. The ultimate treatment of this section of the Colorado River, in cooperation with Mexico, may well be determined by negotiations between the Governments of the two countries. As a feature of the permanent solution of the river problem, it is desirable that the Abejas break be closed and that the levee constructed in 1911 be repaired and maintained and the Colorado River restored to its former course.

(*b*) Provided the water of the Colorado is discharged into the Gulf of California through the Abejas into the Pescadero and Hardy Rivers, there is little probability of cutback affecting the Laguna Dam. Such cutback will not injuriously affect the heading of the Imperial Canal or levees adjacent thereto, with a possible exception of requiring the lowering of the intake of the Imperial Canal a few feet. This is not a serious matter, and is one that should be deal with by the California Development Co. itself when necessary. The diversion by the California Development Co. should be facilitated during low-water stages by dredging or by lowering the sill of its intake rather than by placing obstructions in the channel of the river below the intake.

(6) In view of the existing emergencies along the Colorado River arrangements should be made with the Government of Mexico to provide for the early creation of an international Colorado River commission, embracing in its membership both American and Mexican engineers, invested with large powers and ample authority to examine into and to submit a basis for the adjustment of all questions relating to the conservation, use, and control of the waters of the Colorado River, with a view to such governmental action as shall result in a complete, just, and final settlement of all such matters at issue between the two nations.

We recommend that further work should be undertaken at once and in approximately the following order:

(*a*) The levees north of Volcano Lake should be raised, strengthened, and extended.

(*b*) The existing levees along the west bank of Colorado River to the Abejas should be repaired and protected.

For this purpose and to meet emergencies there should be immediately available the sum of at least $1,000,000.

This provides only for temporary maintenance of levees and does not include the systematic revetment of the river banks.

The conference ventures to suggest certain international questions which are involved and which will inevitably have to be met sooner or later:

(*a*) The matter of the permanent protection of existing works on both sides of the international boundary line, the construction of further works, and the conditions under which the present and future projects may be carried out on Mexican soil, with the consent and cooperation of the Government of Mexico, for the benefit of both countries, to the end that the greatest practicable quantity of the water of the Colorado River may be made available for irrigation by means of storage reservoirs and otherwise and the least possible quantity be permitted to flow unusued to the sea; and to what extent the cost of such maintenance should be chargeable to the properties benefited and to what extent chargeable to either Government.

(*b*) What permanent agreements with the Government of Mexico shall be entered into, having in view the just apportionment of the waters between the two countries, irrigation to be paramount to navigation.

(*c*) The method by which either nation may acquire rights of way for canals, levees, and related works, each within the territory of the other, and the authority to maintain such works.

(*d*) The modification of the boundary line between the United States and Mexico with a view to facilitating the solution of the entire Colorado River problem. An authoritative, just, and final determination of this important question, now a matter of public discussion, will have the effect of removing existing doubts in the public mind and of settling the matter for the benefit of all concerned.

The members of the conference desire to call attention to the fact that the plan and execution of the work accomplished during 1911 followed well-established principles of good engineering. That so large an amount was accomplished in such a brief space of time under adverse circumstances is worthy of the highest commendation. That the restoration of the Colorado River to its former channel was not realized is chargeable to the delay in the negotiations, which prevented prompt inauguration of the work and its prosecution during the low-water season, and also to the disturbed political situation and strife, which demoralized labor conditions.

The members of the conference, in addition to the conclusions above reached, present also a statement of physical and related facts embodied in the accompanying abstract of the data available. These are found largely in the reports of J. A. Ockerson, dated October 4, 1910, and May 20, 1911, and in the earlier reports of C. E. Grunsky, the first addressed to the Director of the Geological Survey, under date of April 4, 1906, and the second to the Secretary of the Interior, dated July 9, 1907; also to the printed hearings before subcommittee of the Committee on Claims of the United States Senate referring to S. 4170, January 21, 1909.

Very respectfully,

F. H. Newell,
Chairman.
W. L. Marshall.
J. A. Ockerson.
J. B. Lippincott.
C. E. Grunsky.
Harrison Gray Otis.

STATEMENT OF PHYSICAL AND RELATED FACTS RELATING TO THE COLORADO RIVER.

LOWER COLORADO RIVER.

The present situation, June, 1911.—For centuries the main flow of the Colorado River has been discharged directly into the Gulf of California, excepting only the year 1905–6, when it flowed temporarily into the depressed area in California known as the Cahuilla or Salton Basin.

The lower Colorado River has the usual characteristics of sedimentary streams, although some of the features of its regimen are accentuated, such as the percentage of sediment, the slope, the very fine material composing its bed and banks, and the extreme elevation of its delta above Salton Basin. The ratio of sediment to water is 1 to 363, while in the Mississippi River this ratio is 1 to 1,500. The total annual volume of sediment amounts to 53 square miles 1 foot deep.

The material of the bed is so easily eroded that its elevation becomes a function of the stage, while no fixed relation between stage and volume of discharge can be traced. For instance, in June, 1904, at the Yuma gauge of 126.3 the discharge measured 50,000 second-feet, while at the same stage in December, 1908, the discharge was 72,000 second-feet.

Records of stage have been kept continuously at Yuma since 1878. The lowest stage recorded to date was in October, 1879, when the gauge read 113.2 feet above sea level.

The highest stage recorded was on February 26, 1891, when the gauge read 133.2 feet above sea level. This gives the extreme range in stage at Yuma since gauge was established as 20 feet.

Regular discharge measurements were inaugurated by the United States Reclamation Service in 1903. Since that time the lowest volume measured was on January 12, 1903, when the river carried but 2,694 cubic feet per second, with gauge reading 116.8 feet.

The largest volume recorded was on June 24, 1909, when the flood reached 149,500 cubic feet per second, with gauge reading 130.7 feet.

The elevation of the low-water bed at the discharge station at Yuma on December 16, 1908, was 113.5 feet at the deepest part, while during the following great flood of 1909 the bed was scoured down to an elevation of 77.2 feet above sea level—a difference of some 36.3 feet. In this way the stream readily adjusts itself to the volume which it is required to carry if confined to a fixed channel.

The high-water channel of the Colorado ranges from 800 to 3,000 feet or more in width, and is quite shallow, while the low-water channel is 500 to 1,000 feet wide and wanders over the whole range of the high-water bed. The high-water bed is more or less obstructed with vegetation, which springs up in the interval between floods. The high-water bank, which lies along the concave side of the stream, is usually well defined and nearly vertical, 6 to 8 feet in height. The opposite bank is often quite indefinite.

The trees along the banks are in many cases buried in the deposits for several feet in depth, and the roots of smaller growth also extend well down. The upper adobe soil, from 2 to 6 feet thick, or sometimes even more, is filled with cracks, through which water readily finds its way.

No coarse sand or gravel is found on the low-water bars, which are composed very largely of fine silt.

The Colorado River for a distance of about 20 miles, beginning at a point about 8 miles below Yuma, forms the boundary between the United States and Mexico. Its navigability was recognized in both the treaty of Guadalupe Hidalgo in 1848 and in the treaty with Mexico of 1853. Under the former neither country is to permit the execution of any works throughout the portion of the river which is a common boundary that would interfere with the river's navigability. Under the latter treaty the free and uninterrupted passage of vessels and citizens of the United States is guaranteed through the river.

The navigation interests on the Colorado River below Yuma have been of no practical importance since the completion of the Southern Pacific Railroad to the river at Yuma in 1877.

The apex of the river delta is at Pilot Knob, about 7 miles below Yuma. From an elevation of about 120 feet, near this point, the land slopes away toward the south, southwest, and west. The fall of the country southerly is about 2 feet per mile in the general direction of the original course of Colorado River. Toward Volcano Lake it is over 2.5 feet per mile for a distance of about 30 miles. Westerly along the general direction of the Alamo River (now the Imperial Canal) it averages over 2.6 feet for a distance of 20 miles, increasing gradually to about 5 feet per mile, thence northerly into the depressed area of Imperial Valley.

The fall from the river toward the high mesa at the easterly limit of the river's delta lands is about 2 feet per mile. The average flood slope of the Colorado River from Yuma to the head of tidewater in a distance of 80 miles is 1.6 feet.

The delta lands of the river form a barrier between the Gulf of California and the Salton Basin, closing against the base of the Cocopah Mountains at Volcano Lake, the rim of which has an elevation of about 34 feet and the bed of which is about 17.5 feet above sea level.

The northerly rim of Volcano Lake is cut by the channel of New River, which is one of the outlets of the lake. The principal outlet is to the south through the Hardy Colorado.

The lowest points of the flat saddle at the north of Volcano Lake have the same general elevation as the rim of the lake—about 34 feet.

It is known from the observations of Dr. William P. Blake, geologist, who was with the exploring parties seeking a railroad route to the Pacific coast (in 1853), that preceding the middle of the last century the Colorado River at high stages repeatedly sent a part of its flow overbank at and near Pilot Knob, and that this water found its way in part to the Alamo River, in which it flowed into the Salton Basin.

It is known that in recent years overbank flow in large volume has taken place repeatedly at many points along the river's course, and that such overbank flow has found its way to the various delta channels of the river. Some, as stated, reached Alamo River, some went by way of the Paredones River and Bayou Saiz and also from branches of the Pescadero into the Volcano Lake region, and thence into the New River toward the north and into the Hardy Colorado toward the south. Some escaping from the river lower down is carried by the Abejas River and other feeders into the Pescadero, and thence to the Hardy Colorado and also into Volcano Lake at its southerly end.

For a half century or more Colorado River has been ready to drop from the ridge on which it is at present flowing, and in such event might have taken a course either westerly and northerly into Salton Basin or southwesterly toward the southerly end of Volcano Lake.

This tendency of the Colorado River to change its course has been strongly resisted by nature, which has interposed obstacles to the erosion of pronounced channels away from the river during the limited annual overbank stage of the river. The annual inundations have resulted in promoting a dense growth of vegetation on the unusually fertile soils of the delta, particularly in and along the depressions which led away from the river bank and which by reason of being slightly depressed areas were the most regularly moistened portions of the delta area. Low places under natural conditions, for some miles away from the river, were therefore covered with rank vegetation, notably with dense growths of arrow weed, with wild hemp, and with willows and cottonwoods. A little more remote from the stream were mesquite thickets, and areas of higher ground occasionally inundated were covered with quelite and other plants. While large volumes of water could pass sluggishly through such dense bank-land vegetation the river found no opportunity to concentrate its overbank flow and to actually make the change of its course, as it readily did in 1905, when aided by a small artificial cut.

The river carries a large amount of drift. Where water becomes shoal or where the flow is over ground covered with standing brush and trees the drift lodges, log jams become serious obstructions to the free flow of water and frequently are potent factors in choking up the high-water outlets of the stream.

The lower part of the Paredones was thus choken off during 1906. The river now flowing down the Abejas is reported to spread out over mud flats, on which the drift is accumulating, several miles below the point about 12 miles easterly from the northerly end of Volcano Lake, known as Campo Lino.

The height of land which separates the Gulf of California drainage basin from Salton Basin is not a pronounced ridge. It is a very flat area, with some depressed areas, such as Laguna Nida, lying generally between the slightly higher bank lands of the delta channels, such as the feeders of the Pescadero, Bayou Saiz, next south of the Paredones, and the Paredones itself.

The surveys made under Mr. Ockerson's direction in 1910 and the surveys made at various times for a levee down the slope of the delta cone to the northward of Volcano Lake indicate clearly that the ground's surface has a decided slope away from Colorado River. At points near the south boundary line of Arizona this slope westerly away from the river may be noted at about 3 feet per mile.

On the east or left bank of the Colorado there is a levee extending from Yuma to the south boundary line of Arizona, a distance of about 25 miles. This was constructed by the United States Reclamation Service as a part of the works of the Yuma project. On the opposite bank the levees constructed in 1906–7 in connection with the closure of the breaks from the Colorado to the Alamo extend southerly from Pilot Knob, paralleling the east-bank levee for about 7 miles, thence swinging off obliquely away from the river. Below Pilot Knob these levees are about 1,500 feet apart.

After the flood of 1910 the left bank levee was breached by bank erosion at a point about 12 miles below Yuma. The record for stability will, however, compare favorably with similar structures on more stable streams, particularly when the close proximity of the levees to the river is taken into account.

One method of flood control which has been carried out in a measure by the California Development Co., is the construction of a line of levees, which turns back from the river at a point about 6 miles below the international boundary line and runs in a southwesterly direction. This levee is finished to a height of 5 feet above high water for a distance of 14 miles. It is covered with gravel and carries a railroad track upon it.

From the end of this levee there is an incomplete line of levee for a distance of about 11 miles farther. This levee was constructed in the spring of 1910, and it is deficient in both height and section.

There is a gap of 10 miles to the west end of the Volcano Lake. which is about 7 miles in length, and terminates at the high ground west of Volcano Lake. This latter levee is also too low to meet emergencies that might occur at any flood stage of river. Where this levee crosses New River flood gates with concrete abutments are provided, but have been rendered useless by a levee loop constructed around them by order of the Mexican Government.

Had natural conditions remained undisturbed it seems probable that Colorado River for many years longer would have continued to flow directly to the Gulf of California.

The opportunity for the river to swing off to the west from its ridge was presented in 1905, when an open dredger cut, made under the concession given by the Mexican Government to the Sociedad de Riego y Terrenos de la Baja California (also known as the Sociedad de Yrrigacion y Terrenos de la Baja California), was gradually enlarged by erosion until in November and December of that year it was suddenly torn out to almost full flood capacity of the river.

This cut had been made from the river to the Imperial Canal at a point about 4½ miles below the boundary line between California and Mexico. Its original length was about 3,300 feet. All attempts to prevent the enlargement of this cut, which became an alarming feature during the river's high stage in the summer of 1905, had failed.

During the high-water period of the year 1906 the outpouring of the flood flow of the Colorado River into the Alamo and New River country caused a submersion of large areas in Lower California and in Imperial Valley. Towns and additional large agricultural areas in Imperial Valley were seriously menaced by the rising flood. Very soon, however, the flow of the water in the depression known as New River extended the New River baranca upstream to and above Calexico, gullying out a gorge which was in some places a quarter of a mile wide and generally 40 to 80 feet in depth.

The upper end of the baranca is now about 6 miles south of the international boundary.

The course of the flood westerly from the Alamo to the New River in Lower California is marked by extensive erosions in the nature of channels and water holes along the line of the former Beltran and Garza sloughs, extending southerly for about 3 miles from the Alamo, near Alamo Mocho, to near what is now known as Cocopah, on the Inter-California Railroad, and thence westward in a network of irregular channels toward New River at and above Pasqualito Bend.

Before the fact was generally recognized that Colorado River was about to make a change in its point of outfall by turning westerly into the Alamo, the California Development Co. found itself in financial difficulties and had solicited a loan from the Southern Pacific Co. This loan was made, but with the understanding that the Southern Pacific was to have control of the expenditure of money loaned, it being proposed as the first thing to be done to close the lower Mexican heading, which had at that time, about June, 1905, not yet assumed the character of the main river channel.

As the location of the heading to be closed was in Mexico, it was arranged that all work done there should be in charge of the Mexican corporation, the Sociedad de Riego y Terrenos de la Baja California. After several futile attempts in the fall of 1905 to turn the river away from the lower Mexican heading, carefully considered preparations were made to close this heading during the low stage of the river following on the 1906 high water.

This engineering feat of unusual magnitude and difficulty was accomplished at a cost claimed by the Southern Pacific Co. to have been about $1,500,000. Early in November, 1906, the river had been put back into its proper channel. The engineer in charge of this work was Mr. H. T. Cory, who was operating under the immediate direction of Mr. Epes Randolph, who represented the Southern Pacific Co. interests. But about a month after the break through the river bank had been closed, on December 7, 1906, an unusual high stage of the Colorado found a weak spot under the levee which had been constructed southward from the closure, and a few days thereafter the entire river was again flowing through a second break to the Alamo.

For a review of the situation at that time reference should be had to the correspondence between the President and Mr. E. H. Harriman, of the Southern Pacific Co., and other papers, as set forth in the President's message of January 12, 1907. This message, together with much information relating to the work done thereafter in turning the river a second time back into its proper course, will be found in the published account of the "Southern Pacific Imperial Valley claim" hearing before a subcommittee of the Committee on Claims of the United States Senate on S. 4170, Thursday, January 21, 1909.

The second break to the Alamo was successfully closed in February, 1907. The actual conduct of the work was again in charge of Mr. Cory, nominally acting as an employee and representative of the Mexican Irrigation Co., but really operating with funds advanced by the Southern Pacific Co. through Mr. Epes Randolph, as agent of the company.

Because the work was located in Mexico it was necessary to thus operate through a Mexican concern.

The Imperial Canal is a water diversion for irrigation from Colorado River in California. Its course is southerly from California into Mexico, paralleling Colorado River for a distance of about 5 miles; thence it swings westerly, lying at the southerly base of Pilot Knob and of the sand hills southwesterly from Pilot Knob, reaching a greatest distance of about 9 miles south of the boundary line, and again approaching to within a mile of the boundary in the fifty-third mile of its course, measured from the present concrete head gate at Pilot Knob.

The canal in California is owned by the California Development Co., a corporation organized under the laws of New Jersey on April 24, 1896. This company is the successor in interest to an earlier concern—the Colorado River Irrigation Co.—which had failed for lack of adequate financial backing. The posting of a notice of the filing of a claim to a water right for the canal was made under the laws of California by Mr. C. N. Perry under date of April 25, 1899. This notice specified 10,000 second-feet of water, and was posted about 1¼ miles above the California boundary line.

A canal was constructed, with its head about 100 yards above the boundary line, and was connected with a canal constructed on Mexican territory south of the boundary line by the Mexican Irrigation Co., already named, all of whose stock was at that time owned or controlled by the California Development Co. It is understood that at that time no right had been granted by the Mexican Government to conduct water through Mexico for use in whole or in part in California. To obviate the necessity of such a concession the canal from the California line near the river was excavated across lands owned by the Mexican Irrigation Co. and was turned loose in the channel of the Alamo, in which the main flow, in part through lagoons and through thickets of mesquite, was to the lower Alamo and into what was formerly known as the New River country in California, now Imperial Valley.

Cuts were made through swamps and thickets where more channel capacity was desirable, and gradually the canal became a continuous open waterway.

After a few years successful operations in Imperial Valley resulted in demands for water that exceeded the canal capacity. The head of the canal showed a tendency to fill up with silt. An open cut was made around the gate and later filled again.

In 1904 the California Development Co. appealed to Congress for a recognition of its claim to water for irrigation from Colorado River. Nominally the Colorado River was recognized as a navigable stream, and there were, in fact, steamboats upon the river. Failing to get congressional recognition of any rights to divert water from the river, a request was made to have the river declared nonnavigable, and the matter was referred to the Engineer Corps of the United States Army.

About the same time the California Development Co., through its subsidiary Mexican corporation, applied to Mexico for a concession of water from the Colorado River, and subject to certain conditions and restrictions the right was granted to the Mexican corporation in June, 1904, to carry water diverted from the river in California through Mexico and also to make a diversion from the river upon Mexican territory to the amount of 10,000 second-feet. The principal condition imposed was that as much of this water as might be required, not to exceed one-half thereof, should be held available for use on lands in Mexico.

Under this Mexican concession a cut was made from the river to the canal at (just below) the California boundary line, but did not prove adequate to relieve the shortage of water in the canal. A second cut was made in October, 1904, about 4¼ miles farther downstream, and it was this cut which was thereafter enlarged and became for a short time, as already described, the main channel of the river.

The dam which was constructed across the lower Mexican heading in the fall of 1906 is known as the Hind Dam. This dam was not seriously damaged by the second break in December, 1906, and is still in service.

The work done along the Colorado subsequent to the second break and prior to the time that the river broke over into the Abejas includes a dam known as the Clarke Dam, built of rock, gravel, and earth across the second break in the river bank; the completion of the Hind Dam across the first break; a levee, or rather the completion of a levee, paralleling the river from a point at Pilot Knob, near the international boundary downstream, to the dam across the first break; the completion of a levee about 10.25 miles in length downstream from the Clarke Dam, paralleling the river for 3 miles, thence swinging obliquely away from the river; a spur levee 8,317 feet long extending in a southwesterly direction from the south end of the Clarke Dam; the completion of a secondary levee along the Imperial Canal from the concrete headgate in California to the lower heading; the construction of a number of cross levees from the main to secondary levee and from the main levee inland, and a system of tracks on levees and dams and in the quarry at Pilot Knob.

To these works which were constructed in connection with the closure of the second break there were subsequently added: An extension of the levee about 10 miles farther toward Volcano Lake and a levee about 8 miles long from the base of Cerro Prieto in a northeasterly direction located about a mile north of Volcano Lake. This last embankment closes New River and is intended to prevent Volcano Lake from overflowing toward the north into the New River country.

During the time that the river was making its change in 1905–6 from a course to the Gulf to a course inland, there was some channel deterioration below the point where the old channel was abandoned and for a year the lower delta areas were comparatively dry. When therefore the river was in flood in 1907 with more than its ordinary summer flow, an unusual proportion of the water found its way over bank into the feeders of Pescadero River and other channels nearer the Gulf. There was less than the ordinary amount of vegetation to check the flow of this water with the result that pronounced channel erosion took place notably in some of the feeders of Pescadero River and in the Abejas, and by 1908 it had become apparent that one of these high-water channels would be cut back to the river. This happened in 1909. The Abejas which had been known for many years as a high-water outlet was enlarged by the outgoing water to full river dimensions and the entire low-water flow and most of the high water took a course westerly and southwesterly toward Volcano Lake and toward the Hardy Colorado.

The break is in the right bank about 20 miles by river below the California-Mexican boundary line and the water flowing through this channel finds its way down the Pescadero through Volcano Lake and the Hardy, thence to the junction of the Hardy with the Colorado. In its passage to the Hardy the silt is practically all eliminated and this deposit is rapidly raising the foot of the steep slope with the result that a slope line may be developed not greatly in excess of the normal stream. During the summer of 1910 a shortage of water in the Imperial Canal developed and this was attributed to the lowering of the bed of the river in consequence of the Abejas break. To remedy this difficulty and protect Imperial Valley from damage by floods the following joint resolution of Congress approved June 25, 1910, was passed:

> That the sum of one million dollars, or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to be expended by the President, for the purpose of protecting the lands and property in the Imperial Valley and elsewhere along the Colorado River

> within the limits of the United States; and the President is authorized to expend any portion of such money within the limits of the Republic of Mexico as he may deem proper, in accordance with such agreements for the purpose as he may make with the Republic of Mexico.

An investigation of the conditions at the head of the Imperial Canal was made, under instructions from the Secretary of the Interior, by Mr. J. A. Ockerson, and it was definitely ascertained that the shortage of water was due mainly to the silting up of both the intake and the canal. Mr. Ockerson says:

> Two courses were open to remedy these defects. With proper appliances, the simplest plan would have been to dredge out the intake. Indeed, this should have been done immediately after the passage of the summer flood, and in all probability a disastrous shortage of water would have been averted; or the water could be raised to such an extent by means of a submerged dam just below the intake as to fill the canal without dredging.
>
> It seems that 1,200 to 1,800 second-feet are necessary to satisfy the demands of the area now under cultivation and to meet the requirements of the large herds of stock and for domestic use, as these are wholly dependent on the canal for their entire supply, as there are no wells; neither are there any storage tanks for use in tiding over an emergency, such as might come from a break in the canal that would cut off the entire water supply for a time and cause great suffering to the people and to live stock. In the latter part of July the volume passing the head gates had dropped down to 746 second-feet and the conditions became alarming. Only 395 second-feet reached Imperial Valley.
>
> The California Development Co. secured a dredge with which to clear out the deposits in the intake and also took steps to build a submerged dam, on which work was begun July 22. By August 23 a trestle was completed across the river and rock dumped therein had raised the water surface two feet, and the water in the intake stood above the tops of the head gates, giving a flow down the canal of 1,700 second-feet.

The Abejas is now an open, well-defined channel at least to a point some miles below Campo Lino, but its character below that point is not known with certainty. It is reported that between Campo Lino and Volcano Lake the water spreads out over broad mud deposits and that the Abejas loses the character of a well-defined channel. Such a condition is recognized as possible, and it may be some years before the water will take a clearly defined route to an outfall, either into the Volcano Lake or into the Hardy Colorado.

The water delivered inland by the Abejas into the region of Volcano Lake far exceeds the amount that reached the lake under former conditions. Consequently the lake is filled by the river's summer flow to higher stages than formerly.

The levee at the north of the lake and the dam across New River prevent this water from flowing north into the Imperial Valley.

All of it at present finds its way ultimately to the Gulf by way of the Hardy Colorado.

At high stages the water brought into the vicinity of Campo Lino by the Abejas inundates large areas in that section, spreading out in the lowest places as far northerly as the California Development Co.'s levee. It is understood that neither the high water of 1909 nor that of 1910 overtopped the banks of the Peredones in the gap of 10 miles between the levees on the so-called height of land. The first and immediate effect of the recent change in the course of the Colorado was to lower the high-water stage of the river at points upstream from the head of the Abejas and to increase flood heights in those portions of the delta reached by the waters of this channel. Here for some time, as the warping up of the country by the deposit of silt progresses, the flood stages will become higher. The Abejas, if allowed to carry the river water unchecked, will build up a ridge and will send water from this ridge both northerly and southerly. That flowing to the north will be a menace to all interests along the lower Colorado River, and as time runs on will require higher and higher embankments to prevent its reaching the country now sloping toward the Imperial Valley. But, as the area now low and to be filled with river deposit is vast as compared with the annual amount of silt carried by the river, it must be regarded as a feasible project to prevent the undue northerly extension of the overflow area by artificial embankments. However, if a comprehensive project includes a line of levee from some point on the Colorado River across the valley to the base of the Cocopah Mountains, the project must also provide for the maintenance of this levee, because, as now areas of the delta are raised by the silt deposits, the flood waters will be deflected in new directions and new high-water stages will be attained that will make it necessary to add to or to supplement the levee from time to time.

The new channel of the Colorado River below the point of separation from the river's old channel is somewhat lower than the old channel and its course is into and through a relatively low portion of the delta.

It must therefore be assumed that in consequence of the lower low-water stages in this new section of the river, there will be some great recession upstream from the head of the Abejas. The topographic and hydrographic information relating to the region through which the Abejas takes its course is not sufficiently definite to enable the conference to agree upon the amount of depression of high and low water that will probably result from this grade recession at the head of the Imperial Canal and at the Laguna Dam.

It is not believed that the grade recession will bring the low water of any season quite down to the present elevation of the grade sills at the head of the Imperial Canal, though it seems probable that it will in some measure interfere with the diversion of adequate amounts of water into the canal at the river's low stages, particularly under conditions as they have prevailed during the last few years. Moreover, as soon as the maximum depression is reached, which will probably be within one or two seasons, the river will, as it has in the past, again build up its bed and gradually restore the low water and flood elevations of the past.

At a point about 8 miles above Yuma a diverting dam has been constructed by the United States Reclamation Service across Colorado River. This dam, known as the Laguna Dam, has a crest length of 4,780 feet and rests at both ends against granite bedrock. The foundation of the dam between its bedrock-supported abutments is the river silt. Any material depression of the low-water stage of the river below the dam must be regarded as a menace to its stability.

The Laguna Dam and related works has cost $1,673,000, and there have been expended on the Yuma irrigation project, including the cost of the dam, about $4,161,000.

A permanent change of the course of the Colorado from an outfall into the gulf to a discharge into Salton Basin would be ruinous to all property interests in the Imperial and Coachella Valleys. It might compel an abandonment of the Yuma irrigation project, and might make impossible the irrigation of some 400,000 acres of land flanking the Colorado River at various points above Yuma, which under natural conditions will some time be brought under irrigation. Such a change of course would prove ruinous to the delta lands of the Colorado River in Lower California. Some of these lands are now under irrigation with water from the Imperial Canal while the main body thereof is used for grazing purposes.

There are about 800,000 acres of land in the delta of the Colorado River within Mexico. About 22,000 acres of this land were under cultivation by irrigation in 1910.

In the Imperial Valley in 1910 there were farmed and actually irrigated 203,000 acres of land.

In the Coachella Valley northerly from the Salton Sea about 10,000 acres of land are under a high state of cultivation.

The population of Imperial Valley and of the Coachella Valley is estimated at more than 15,000.

The following villages and towns are within the area that would ultimately be flooded if Colorado River is ever allowed to take a permanent course into the Salton Basin: Calexico, with a population of 797; El Centro, 1,610; Holtville, 729; Imperial, 1,257; Brawley, 881; also Heber, Sigsbee, Mecca, Thermal, Coachella, and Indio whose population is included in the general statement relating to the entire population of the Salton Basin.

The total area within the United States that would ultimately be submerged if the Colorado River discharged inland would be nearly 1,900 square miles or about 1,200,000 acres.

The rainfall in this region is only 2 to 3 inches per year. Without irrigation it would be an absolute desert. Except near Holtville, all of Imperial Valley is also dependent upon the Imperial Canal system for water for domestic use. Near Holtville some potable water is obtained from artesian wells.

Any scheme of river treatment which involves not only the holding of the Colorado on its original course to the gulf, but also the prevention of overbank flow, by the construction and maintenance of levees, would for a time at least cause higher river stages for the same volumes of flood flow than have occurred in the past under natural conditions of almost general bank submersion. Consequently such treatment would result in at least a temporary greater menace to the defensive works now effective southward from Pilot Knob than would otherwise result.

Fuller investigations than have yet been made should precede the adoption of any such treatment or of any modification of such treatment having in view only minor changes of alignment and outfall modifications.

Any depression of the river bed throughout that part of Colorado River, from Pilot Knob southerly to the south boundary line of Arizona, will be of direct benefit to the protection works which now prevent the river from going down the Alamo into Salton Basin. The greatest menace to these works, under conditions as they have prevailed since they were completed is the unstable river bank. The menace becomes small if the flood stages can be kept below bank heights; it increases rapidly as flood depth on the river bank is increased.

The advantage which results from a depression of water surface particularly at flood stage in that part of the Colorado River for some miles below Pilot Knob is in some measure offset by the increased difficulty of supplying an adequate flow of water to Imperial Canal; also, by the increased difficulty of supplying water to lands now irrigated mainly by pumping, in Arizona, below Yuma; also, by the resulting menace to the stability of the Laguna Dam.

Surveys covering some 35 miles of the Colorado River, above and below the break, and also several miles of the Abejas River, were made in August and September, 1910, under Mr. Ockerson's direction.

An examination was also made of Volcano Lake region, New River, Alamo and Hardy Rivers, extending down the latter river to its junction with the Colorado.

As a result of these investigations and a careful study of the physical situation, a project was developed providing for the closure of the Abejas River by means of a rock-fill dam to divert the water to the Colorado and about 25 miles of levee along the west bank of the Colorado River, about 3,000 feet from its westerly bends.

This project was approved by the President, the Secretary of the Interior, and the commissioner appointed by the Mexican Government to pass on the work.

As the projected work is located in Mexican territory, it became necessary to secure the consent of the Mexican Government before active operations could begin. As finally agreed upon, the terms provided that the work should be done by a Mexican corporation, and the Colorado River Land Co., owners of the land on which the proposed improvement is located, agreed to the use of its charter rights and powers to carry out the project, the cost thereof to be met by the United States.

While the project was submitted to the Secretary of the Interior on October 4, 1910, with a view to completing the works before the advent of high water, the diplomatic agreement was not consummated until early in January, 1911.

By this time the low-water season had passed and it was fully realized that the prosecution of the work in the face of inevitable flood conditions would greatly increase the difficulty of closing the Abejas, and failure to divert the water to the Colorado was more than probable.

The problem was further complicated by the political situation, the scene of operations being under the control of insurrectos, whose presence seriously disturbed labor conditions, alarmed the contractors on levee work, who suffered substantial losses of stock, equipment, and subsistence stores through their depredations, and repeatedly interfered with the train service engaged in delivering rock to the Abejas Dam.

Active work was begun early in January, 1911, or as soon as diplomatic arrangements were concluded. Some 7½ miles of railway were built from a point on the railway line of the California Development Co., 15 miles below Hanlons Heading, to the Abejas River. The levee line was constructed some 24.6 miles long, beginning 11 miles below

Hanlons Heading, thence extending southward along the west bank of the Colorado River at a distance of about 3,000 feet from the westerly bends, and terminating at a point about 20 miles above tidewater.

The construction of the levee required some 613 acres of clearing and grubbing and 1,277,984 cubic yards of earthwork; 1,300 men and 2,100 animals were employed. The work was completed April 1 1911, at a total cost of $432,434.76. The customs duties, payment of which are still pending, estimated at $20,000, should be added to above cost if not remitted.

The construction of the dam across the Abejas River was begun on January 21, 1911, when the tracklaying reached the river, and the last bent of the trestle was driven on February 2, and the bed of the stream was blanketed with rock by February 5.

The equipment of cars, locomotives, steam shovels, and pile drivers used was hired from the Southern Pacific Railway Co., with the exception of two small steam shovels and some minor equipment, which were borrowed from the United States Reclamation Service.

A succession of moderate floods resulted in several breaks as the work progressed and greatly increased the cost of closure, but the dam, some 1,500 feet long and a top width of 20 feet, was finally completed on May 15, 1911. In fact, all of the projected work was completed as planned, except the levee protection.

The natural banks of the Abejas at the south end of the dam have an elevation of 85 feet above sea level, and as the project was based on the supposition that the closure would be made at low water, it was expected that the diversion into the Colorado would be made without overtopping the banks.

The water did flow down the Colorado for several weeks, but erosion of the bed did not keep pace with the increasing volume, and the water impounded by the dam rose to such height as to overflow the banks, and following down along the new, unprotected levee, soon began its destructive work, and finally finding its way into the Pescadero and down the Hardy. In the meantime practically the entire flow down the Abejas River had been cut off by the dam.

The river continued to rise, and a break through the levee at the south end of the dam partially restored the flow to the Abejas channel and lowered the pool above the dam, causing violent eddy action along levee north of the dam, resulting in another break, which now carries the whole volume of the river.

The status of the work at the present time shows some 6 or 7 miles of levee destroyed and the water again flowing down the Abejas River.

The damage to the projected work, based on the cost thereof, as near as can be ascertained before the recession of the floods, is about $368,950.12.

The value of the work still remaining, based on the cost of construction, is about $431,049.88.

The work which has been executed has been in accordance with good engineering practice, and the fact that the restoration of the Colorado River to its former channel is not accomplished is chargeable to matters beyond the control of the engineers.

LETTER FROM THE PRESIDENT OF THE SOUTHERN PACIFIC COMPANY AND ACCOMPANYING PAPERS.

SOUTHERN PACIFIC CO.,
New York, December 13, 1911.

The PRESIDENT OF THE UNITED STATES,
The White House.

SIR: Referring to the diversion of the waters of the Colorado River into the channel of the Abejas, or Bee River, in Mexico, by reason of which the Colorado River has left its regular channel and is flowing into Volcano Lake, Mexico, thereby imperiling the property of thousands of settlers in the Imperial Valley, and referring to my conference with you in June last, I have to say that the Southern Pacific Co. is prepared to undertake to return the Colorado River to its original channel and to maintain the levees necessary to keep it there for one year upon the following terms:

Upon the appropriation by Congress and the payment to the Southern Pacific Co. of $1,083,673.97, being the amount given by Mr. G. E. Grunsky, consulting engineer, in his statement to the Committee on Claims of the House of Representatives when acting in an advisory capacity to said committee, as reimbursing the said company for work costing $1,600,000, done in the year 1907 at the request of President Roosevelt, and upon the further appropriation by Congress of $1,500,000, to be placed at the disposal of the President of the United States and to be used by him in restoring the flow of the Colorado River to its former channel, the Southern Pacific Co. will agree to raise and reenforce the so-called California Development Co. levees a distance of 10.45 miles, to build a new levee and dam across the Abejas, or Bee River, a distance of 7.1 miles, and to raise and reenforce the so-called Ockerson levees a distance of 17.40 miles, in accordance with the report and plan of Mr. Epes Randolph, dated November 1, 1911, a copy of which is submitted herewith.

The Southern Pacific Co. will further guarantee that this system of levees, $34\frac{19}{20}$ miles in total length, will turn the Colorado River into its old channel, and it will agree to maintain this levee system for a period of one year after the completion of the work.

For this work the Southern Pacific Co. is to be paid by the President of the United States, out of said appropriation of $1,500,000, the actual cost of such work and the cost of its maintenance for one year, the total, however, not to exceed said appropriation. If the cost to the Southern Pacific Co. shall exceed the appropriation, then the Southern Pacific Co. will itself bear such excess. In estimating the cost of the work to the Southern Pacific Co. the charge for transportation shall be in accordance with the arrangement now in effect between the Government and said company in reference to the work done by the Government on the Colorado River during the past year.

In case the Southern Pacific Co. should fail to cause the Colorado River to return to its former channel and to maintain the levees for one year thereafter, then, in that event, the Southern Pacific Co. is to receive no compensation or reimbursement for the work which it may do under this offer.

To take advantage of low-water periods of the Colorado River, the work contemplated in Mr. Randolph's report must be begun at once. Therefore it should be understood that this offer should be acted on promptly.

Respectfully, yours, R. S. Lovett.

REPORT ON THE LOWER COLORADO DELTA.

By Epes Randolph.

Tucson, Ariz., *November 1, 1911.*

J. Kruttschnitt, Esq.,
Director Maintenance and Operation, Chicago, Ill.

Dear Sir: Complying with your request of June 16, 1911, we have made an examination and a survey of the lower Colorado delta for the purposes—

First. Of ascertaining the true characteristics of that country topographically and otherwise; and

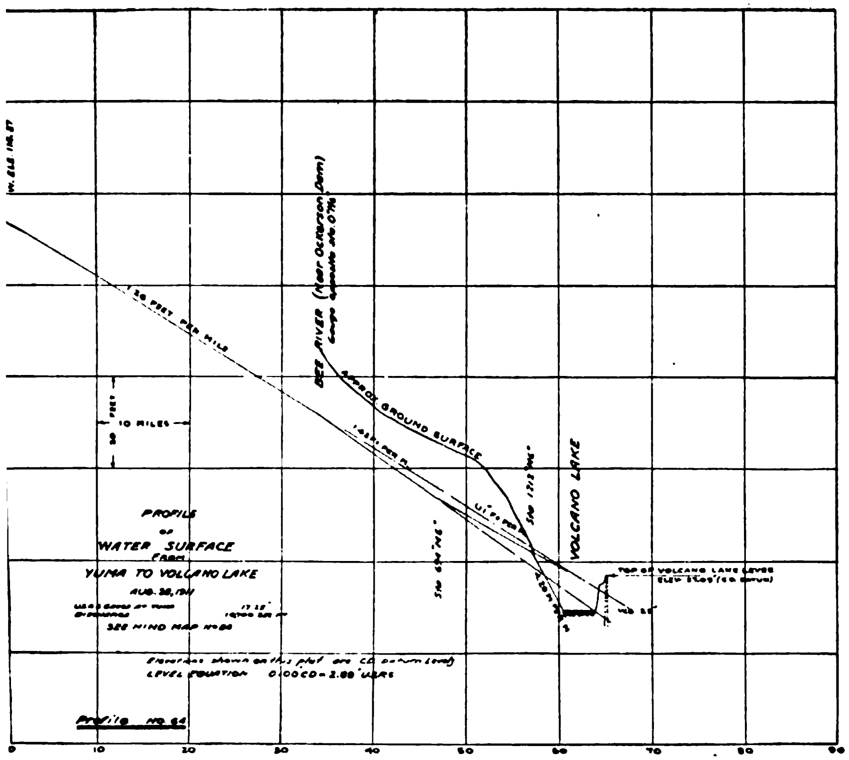
Second. Of suggesting a plan whereby the Colorado River may be permanently controlled in the most economical manner possible.

We have prepared and submit herewith maps, drawings, profiles, articles of classification and specification, and estimate sheets, which, taken collectively, give the data acquired and the conclusions reached.

A study of these exhibits will show that if the Colorado River be left unrestrained it will eventually find its way to the Salton Sink and in time inundate Imperial Valley.

Profiles Nos. 68 and 70 have for a basis the contours shown on map No. 54. The grade lines on these profiles show the elevation to which the ground surface will be ultimately raised by the deposition of silt, etc. First, the depression known as Volcano Lake will be filled to its rim with alluvial deposits and drift. Thereafter this area and the surrounding country as well will be raised to an elevation of approximately 67½ feet above mean sea level. The elevation of the bottom of Volcano Lake two years ago, when the waters of the Colorado River first reached this lake, was 17.8 feet above mean sea level. It is now 28 feet above mean sea level, having risen 10.2 feet in the period of two years. Hence it is clear that it would be impracticable to raise and prolong the east-and-west levee to the extent that this would have to be done in order that it might give reliable protection to the Imperial Valley. The length of time that it will take to consummate the raise of ground surface to a height where it will be no longer practicable to maintain an east-and-west levee can not be definitely foretold, because there are two vital but indefinite factors to be reckoned with: First, the volume of water passing through the river in any given period; and, second, the amount of insoluble matter carried by the water. The two are equally variable and indefinite.

We know that since the Colorado River began its flow into Volcano Lake it has discharged 29,000,000 acre-feet of water, and we know that the bottom of Volcano Lake has been raised 10 feet by the deposition from this flow of water. During the nine years past the flow of the Colorado River has aggregated 154,757,864 acre-feet, or an average of 17,195,318 acre-feet per annum. We also know that



PROFILE NO. 64.

uring one of these years the flow was 25,967,577 acre-feet. Reckoning from this data and from established percentages of silt carried, nd approximating the volume of the basin to be filled, it is clear hat it will take not more than four years of average flow to build he ground surface at Volcano Lake to an elevation 40 feet above mean sea level, or to the elevation where it would no longer be practicable to attempt to maintain an east and west levee.

The east and west levee opposite Volcano Lake now stands only 4 feet above high-water level of the lake which occurred in July last.

In view of all of the foregoing I recommend:

First. That the westerly portion of the east and west levee be, forthwith, so raised and extended as to occupy a plane 6 feet above its present crest.

Second. That a complete and effective levee system, including a rock dam, crossing Bee River, be constructed as indicated by location B, map No. 44, the work to be executed as described in accompanying exhibits hereinbefore referred to, and that this work be commenced and completed during the next low-water period.

Levee construction should begin about June 15, 1912, and be prosecuted so as to insure the completion of the earth embankment and also the putting in place of the railway track to and across Bee River not later than October 1, 1912. Thereupon, or as soon thereafter as the water shall have reached a low stage, the rock dam should be built, thus returning the water to the original channel of the Colorado River. It is important that this be done at the beginning of the low-water period rather than later on, because the old channel below the Bee River break is now more or less covered with vegetation and is being further diminished in area by drifting sands. Therefore the water should be given as much time as possible in which to remove these obstructions prior to the following high-water stage of the river, so that the overflow water, with which the levee must contend, may be held to the minimum.

After the entire levee shall have been blanketed with gravel and otherwise completed, as described, the railway track should be put in good condition for further operation, when necessary, and be regarded as a portion of the permanent levee structure.

With the dam and levee system completed as specified, I should regard the river as safely under control. To make this control permanent, however, the levee must be constantly watched and kept in repair. The Colorado River, between the concrete headgate and a point opposite the southerly terminus of the levee, must also be carefully watched and held within its present channel. This can be readily accomplished by the use of diverting or guiding dikes, as the necessity for the same may, from time to time, be developed. Such dikes will be inexpensive if built immediately upon the river manifesting a tendency to center its current against either bank with sufficient velocity to produce erosion.

I should say $30,000 per annum would be an ample sum to cover the cost of watching and maintaining the levee and of controlling the river.

Yours, truly, EPES RANDOLPH.

COLORADO RIVER CONTROL.

CLASSIFICATION AND GENERAL DESCRIPTION OF LEVEES AND DAM, TOGETHER WITH ESTIMATES OF QUANTITES AND COST OF WORK.

LOCATION B.

[See Hind map No. 44.]

Classification and description.

(A) *Repairs to California Development Co. levee, between concrete head gate and station 149+95.*—Such defects as may be found in this portion of the levee due to the burrowing of animals, shrinking. cracking, displacement of the gravel coating, etc., shall be repaired. and additional gravel applied where necessary. Railway shall be overhauled, rotten ties replaced, alignment and surface readjusted, and track put in proper condition for the heavy traffic incident to the construction below.

(B) *California Development Co. levee, south of station 149+95*, shall be raised to the grade shown on profile No. 69, and when finished shall have slopes of 2½ feet horizontal to 1 foot vertical on both sides, and a top width of 8 feet. Natural ground surface along the toe of the slope of the present levee on the land side shall be cleared to a width sufficient to accommodate the increased width of base. On the river side the ground surface shall be cleared only to such width as will allow the slope of the embankment of the new section to extend 2 feet horizontally into the natural timber and brush. It is proposed to raise this levee with "Andrade" gravel handled by train.

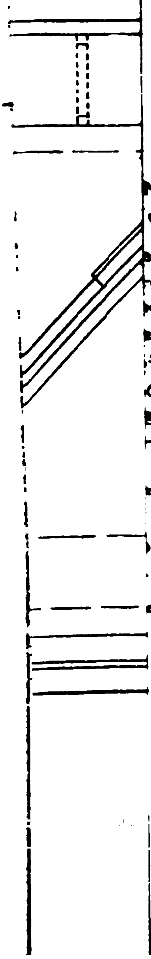
(C) *New levee extending from station 387+00 to 768+00, including Bee River Dam.*—Clearing and grubbing: A strip of ground corresponding in width to that of the base of the levee (less 2 feet on the river side) shall be thoroughly cleared and grubbed and all vegetable and other perishable matter removed. It shall then be thoroughly plowed throughout its entire area. Borrow pits shall be located on the land side of the levee, with the inner edge of the same 40 feet distant from the toe of the slope of the levee. These borrow pits shall extend parallel with the levee, they shall be 400 feet in length and excavated to a depth not greater than 4 feet, and they shall be so spaced that there shall be left between them a strip of undisturbed ground not less than 30 feet in length measured in the longitudinal direction of the levee. The "berm"—that is, the space between borrow pit and toe of levee—shall be cleared but not grubbed. The spaces between the borrow pits themselves and the "berm" opposite shall be neither cleared nor grubbed.

A "muck" or core ditch shall underlie the entire levee. This ditch shall have a width of 6 feet at its bottom and a depth of not less than 2 feet, and shall be so located that the center line of the same shall be parallel with the center line of the levee and 3 feet distant therefrom toward the land side of the levee. (See cross section EE, drawing No. 67.) Test pits shall be sunk along the center line of this ditch sufficiently near each other to clearly determine the character of the underlying material, and where cracked adobe

NSTRUCTION

ND DETAILS OF
PREVENTION OF
ROW PIT.
EVEE ON THE

No 67



MATE OF COST

or One DyKe

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th Gravel Pit)	
o Cu.Yd.	600.00
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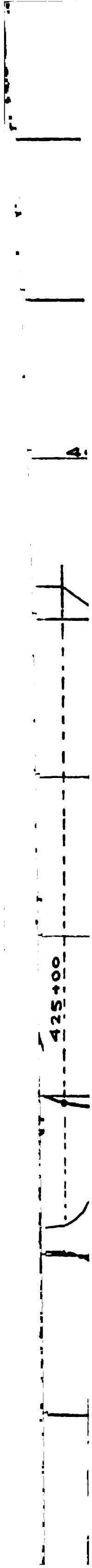
(67)

C.P.Q.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425+00

or other unsuitable material be found the "muck" ditch shall be carried down to the bottom of such material, unless the water table shall be sooner reached. Prior to the refilling of the "muck" ditch its bottom shall be plowed (except where water is found), thus insuring a perfect bond between the bottom of the ditch and the refill material. The "muck" ditch shall be refilled with loam, silt, or other material free from lumps.

The earth levee shall be finished true to line and of even surface, with a top width of 8 feet and slopes of 2 feet horizontal to 1 foot vertical. The levee shall be built with scrapers and the material applied in layers of not more than 1 foot in thickness. No vegetable nor organic matter shall be allowed to enter the levee.

When the earth levee shall have been completed to the section above described it shall be blanketed with suitable gravel, to be applied from cars, and, by the use of spreaders, the cross section shall be so adjusted that when completed the levee will have a top width of 8 feet and slopes of 2½ feet horizontal to 1 foot vertical on both sides. (See cross section EE, drawing No. 67.)

"Andrade" gravel shall be used except where extraordinary erosion is likely to occur, and in such places "Mammoth" gravel shall be used.

Bee River Dam: The entire channel shall be spanned by a single-track pile trestle. The central portion of the channel for a distance of 800 feet in length shall be spanned by a second trestle located on the upstream side, parallel with the first and 20 feet distant therefrom. It is proposed to close the river when the flow of water is not greater than 15,000 feet per second. Rock ("quarry run") from "Andrade" quarry shall be dumped from cars into the crevasse from both ends of trestle No. 1 until the width of the channel shall have been reduced to 800 feet, thus compelling all of the water to pass under both trestles. The largest rock obtainable at "Andrade" quarry shall then be dumped into the river from the lower trestle until the surface of the water above the trestle shall have been raised vertically about 3 feet. "Quarry run" from "Andrade" shall then be dumped from the upper trestle until the upper portion of the dam shall have attained a height about equal to that of the lower. Rock shall then be dumped from both trestles, large rock from the lower, "quarry run" from the upper, in such a manner as to maintain a level cross section as near as practicable until the closure shall have been effected. Great care must be taken to raise the dam as uniformly as possible throughout its entire length. If it should be found impracticable to procure sufficient large rock from "Andrade" quarry, it will be necessary to resort to Declez or other available quarries.

The rock dam shall be carried to the elevation of extreme high water in the way above outlined. Thereafter it shall be raised to profile grade with gravel and blanketed on the upstream side with the same material.

(D) *Restoring, raising, enlarging, and protecting the "Ockerson" Levee.*—There are two stretches of this levee which can be made use of in the proposed levee system. These lie between stations 00 and 387 and between stations 768 and 1300. (See map No. 44.)

This levee shall be treated as follows: Clear, grub, and plow a strip of ground on both sides of the existing levee sufficient in width to provide for the enlarged levee. (See drawing No. 67.) Excavate a muck ditch on each side of the present levee running parallel therewith. (See cross section CC, drawing No. 67.) These muck ditches shall be 4 feet in width, generally 3 feet in depth, and otherwise treated as described on page 178. Next, restore with earth (handling with scrapers) the several portions of this levee which have been in part or wholly washed away; also raise the entire levee to profile grade (see profile No. 2), this to be done with earth and placed by scrapers, where practicable, and finally blanket the levee with gravel handled by train, as described on page 179.

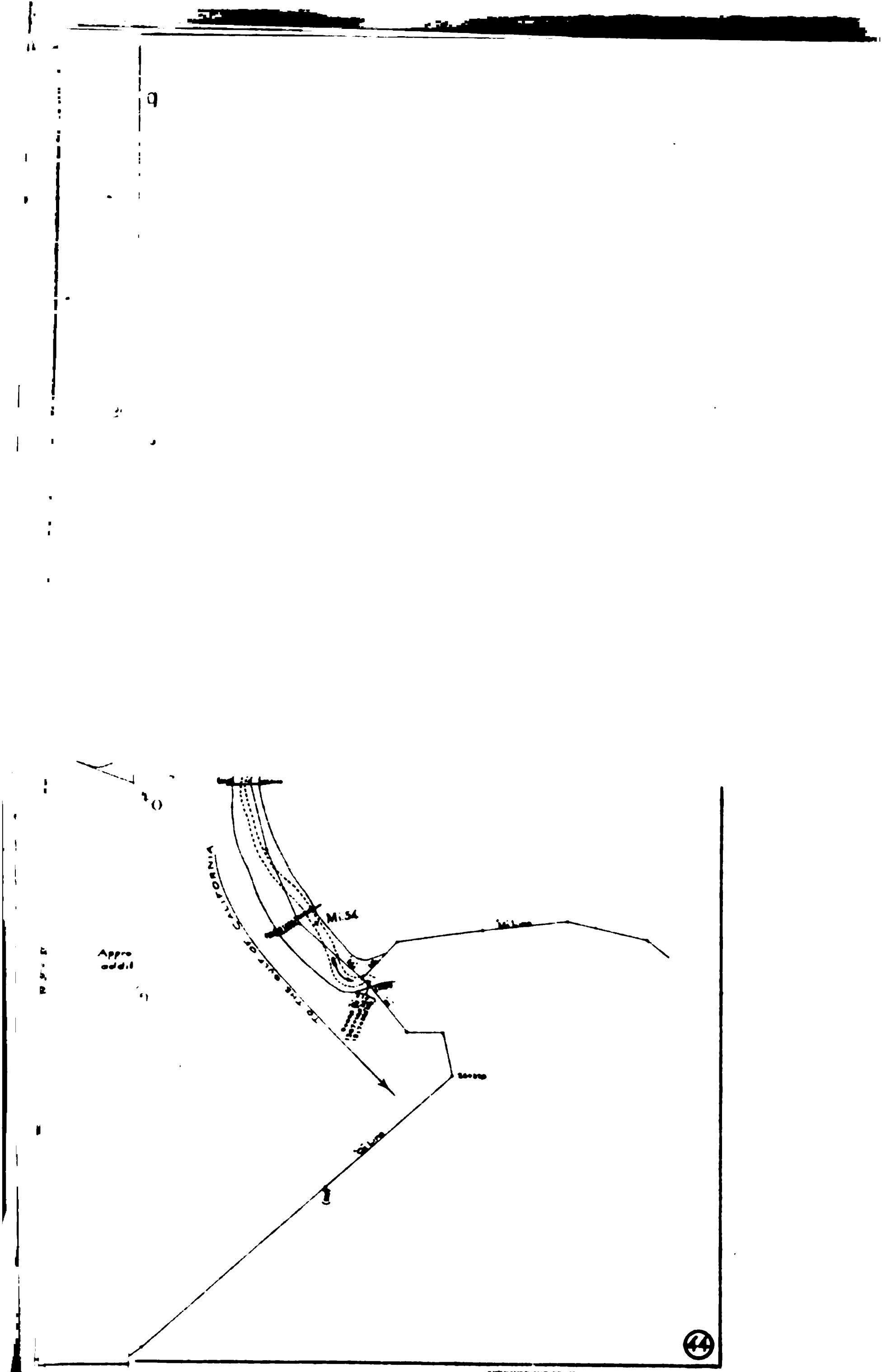
(E) *Protection of "Ockerson" Levee.*—Borrow pits having already been excavated on the river side of the levee, it has become necessary to in some way neutralize the evil effect of the same, and the most economical way in which this can be done seems to be by a system of dykes. (See drawing No. 67 and map No. 44.) These dykes shall be built as follows:

Prepare the ground by thoroughly cleaning it of all brush and undergrowth, piling the same along the upstream toe of the dyke. Omit grubbing generally, but excavate a ditch underlying the center of the dyke, throughout its length, 3 feet in width and 3 feet deep. Put in place a frame trestle of temporary character, lay upon it a railway track, and build the dyke to the cross section shown (see cross section DD, drawing No. 67) with "Andrade" gravel dumped from cars. Thereafter riprap the throat and nose of the dyke as indicated on the drawing. Finally remove the track and recover the deck of the trestle.

(F) *Railway track.*—A standard-gauge railway track shall be built along the entire levee, using rail having a weight of not less than 50 pounds per yard. This track shall remain upon the levee after completion and be regarded as a feature of the permanent structure.

In connection with the railway there shall be a metallic circuit telephone system, with instruments placed in booths spaced 1 mile apart, booths to be large enough to accommodate levee repair tools and supplies.

(G) *Channel protection.*—Along certain stretchers the channel of the Colorado River shows a tendency to change its course. (See map No. 44.) It is proposed to maintain the present channel at these points by driving rows of piles along the edge of the bank, to be so placed as to catch and retain the driftwood of the river. The piles shall be in rows of three transversely, and they shall be capped and sway-braced transversely and girted longitudinally.



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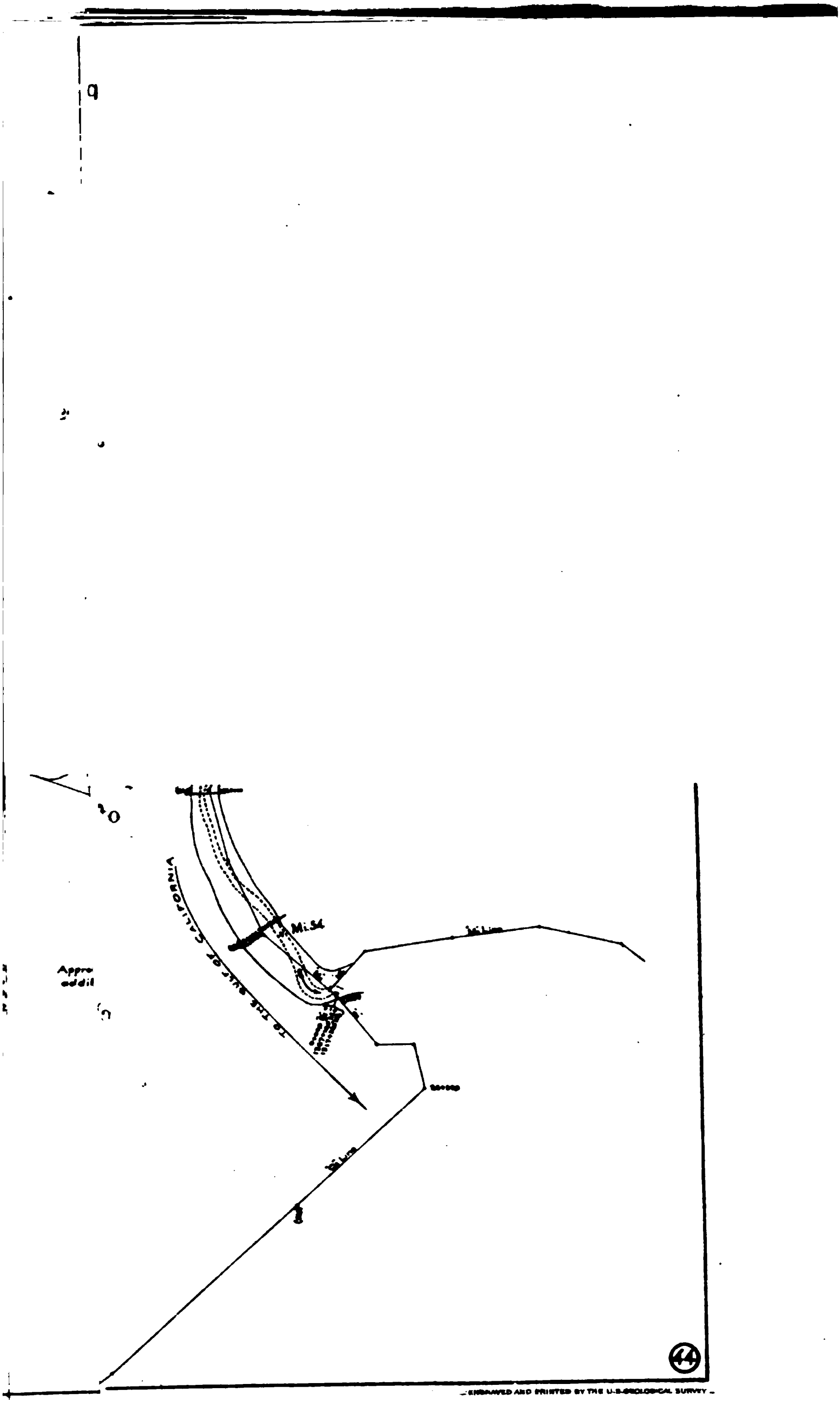
House Doc. No. 504; 62d Cong., 2d Sess.



ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

House Doc. No. 504; 62d Cong., 2d Sess.

Estimate of quantities and costs.

(A) Repairs to California Development Co.'s levee, from concrete headgate to station 149+95, distance 6.85 miles:	
Trenching and exploration, 5,000 cubic yards, at 50 cents per cubic yard	$2,500.00
Gravel, 130,000 cubic yards, at 35 cents per cubic yard	45,500.00
Track repairs	2,000.00
(B) Raising and reenforcing California Development Co.'s levee, station 149+95 to station 340+00, distance 3.5994 miles:	
Clearing and grubbing, 3.6 miles, at $500 per mile	1,800.00
Gravel, 82,000 cubic yards, at 35 cents per cubic yard	28,700.00
(C) New levee, including a dam across Bee River, from station 387+00 north of Bee River to station 768+00 south of Bee River, distance 7.1023 miles:	
Clearing and grubbing, 4.45 miles, at $2,500 per mile	11,125.00
Excavation muck ditch, 87,500 cubic yards, at 15 cents per cubic yard	13,125.00
Earth embankment, 332,000 cubic yards, at 25 cents per cubic yard	83,000.00
Gravel, 61,000 cubic yards, at 35 cents per cubic yard	21,350.00
Bee River Dam:	
Trestle, 3,000 linear feet, at $15 per linear foot	45,000.00
Rock, 275,000 cubic yards, at $1 per cubic yard	275,000.00
Gravel, 60,000 cubic yards, at 35 cents per cubic yard	21,000.00
(D) Raising and reenforcing Ockerson Levee, station 0+00 to station 387+00, distance 7.329 miles, and from station 768+00 to station 1300, distance 10.076 miles; total 17.405 miles:	
Clearing and grubbing, 17.4 miles, at $500 per mile	8,700.00
Trenching, 82,400 cubic yards, at 20 cents per cubic yard	16,480.00
Increasing levee section, gravel and earth, 645,000 cubic yards, at 35 cents per cubic yard	225,750.00
(E) Cross dikes for protection, Ockerson Levee:	
Temporary trestle, 39,520 linear feet, at $3.50 per linear foot	138,320.00
Trenching, 13,520 cubic yards, at 20 cents per cubic yard	2,704.00
Gravel, 312,000 cubic yards, at 35 cents per cubic yard	109,200.00
Riprap, 52,000 cubic yards, at 60 cents per cubic yard	31,200.00
(F) Railway track:	
Removing track from Ockerson Levee to new location (labor), 10.33 miles, at $600 per mile	6,200.00
Additional track (labor and material), 14 miles, at $7,500 per mile	105,000.00
Telephone system	7,500.00
(G) Channel protection, Colorado River, 10,000 linear feet, at $5 per linear foot	50,000.00
	1,251,154.00
Engineering, superintendence, etc., 15 per cent	187,673.10
Total	1,438,827.10

LOCATION A.

Estimate of quantities and costs.

(A) Repairs to California Development Co.'s levee, from concrete headgate to station 149+95; distance 6.85 miles:	
Trenching and exploration, 5,000 cubic yards, at 50 cents per cubic yard	$2,5
Gravel, 130,000 cubic yards, at 35 cents per cubic yard	45.5
Track repairs	2,0
(B) Raising and reenforcing California Development Co.'s levee, station 149+95 to station 242+52.4; distance 1.7513 miles:	
Clearing and grubbing, 1.83 miles, at $500 per mile	9
Gravel, 14,000 cubic yards, at 35 cents per cubic yard	4.9
(C) New levee, including dam across Bee River, from station 242+52.4, on California Development Co.'s levee, to station 768+00, on the B line south of Bee River; distance 15.9786 miles:	
Clearing and grubbing, 13.55 miles, at $2,500 per mile	33,8
Excavation muck ditch, 205,500 cubic yards, at 15 cents per cubic yard	30,8
Earth embankment, 1,052,000 cubic yards, at 25 cents per cubic yard	263.0
Gravel, 201,000 cubic yards, at 35 cents per cubic yard	70,3
Bee River Dam:	
Trestle, 3,000 linear feet, at $15 per linear foot	45,0
Rock, 275,000 cubic yards, at $1 per cubic yard	275,0
Gravel, 60,000 cubic yards, at 35 cents per cubic yard	21,0
(D) Raising and reenforcing Ockerson Levee, station 768+00 to south end of levee, as now constructed, distance 10.076 miles:	
Clearing and grubbing, 10 miles, at $500 per mile	5,0
Trenching, 48,000 cubic yards, at 20 cents per cubic yard	9.0
Increasing levee section, gravel and earth, 155,000 cubic yards, at 35 cents per cubic yard	54,2
(E) Cross dikes for protection Ockerson Levee:	
Temporary trestle, 17,480 linear feet, at $3.50 per linear foot	61,1
Gravel, 138,000 cubic yards, at 35 cents per cubic yard	48,3
Riprap, 23,000 cubic yards, at 60 cents per cubic yard	13,8
Trenching, 5,980 cubic yards, at 20 cents per cubic yard	1,1
(F) Railway track:	
Removing track from Ockerson Levee to new location (labor), 12.20 miles, at $600 per mile	7,3
Additional track (labor and material), 14 miles, at $7,500 per mile	105,0
Telephone system	7,5
(G) Channel protection Colorado River, 30,000 linear feet, at $5 per linear foot	150,0
	1,258,0
Engineering, superintendence, etc., 15 per cent	188,7
Total	1,446,7

THE SECRETARY OF THE INTERIOR,
Washington, January 6, 1912.

MY DEAR MR. PRESIDENT: On January 3, 1912, Secretary Hilles forwarded me a copy of a communication to you, dated December 13, 1911, from Judge Robert S. Lovett, of the Southern Pacific Co., presenting the proposal of that company to "undertake to return the Colorado River to its original channel and to maintain the levees necessary to keep it there for one year" on terms and conditions stated in Judge Lovett's letter. The proposal and its accompanying documents were turned over to Gen. W. L. Marshall, consulting engineer for this department, for his examination and comment. I inclose herewith a copy of his statement. The substance of Gen. Marshall's opinion is that the work proposed by the Southern Pacific Co. should not be undertaken either by it or by any other agency on behalf of the United States at this time, but that the entire subject of the improvement of the lower Colorado River and the utilization of its waters, as well as the protection of adjacent lands in this country and in Mexico from overflow, should be investigated by an international commission representing the United States and Mexico, with the view of determining by treaty the rights, interests, and obligations of the two countries, respectively, in all of these matters, and the adoption of a treaty governing the future action of the two countries in respect thereto. This is the most important recommendation of the advisory board which, by your authority, was convened here in Washington some months ago and presented a report which I have forwarded to you for transmission to Congress or for such other disposition as you may deem wise. You will find a reference to this matter in my annual report for the year ended June 30, 1911, on pages 19 and 20 of that report. I see no reason to change the statements contained therein, but on the contrary I consider it of great importance that negotiations should be immediately opened and vigorously conducted with a view of arriving at a treaty with Mexico covering this subject.

I return herewith letter of Judge Lovett and the original of the report by Col. Epes Randolph, to which reference is made in Judge Lovett's letter. I have retained the carbon copy of Col. Randolph's report for the use of this department.

Respectfully,
WALTER L. FISHER,
Secretary.

The PRESIDENT,
The White House.

DEPARTMENT OF THE INTERIOR,
Washington, January 5, 1912.

The SECRETARY OF THE INTERIOR.

SIR: I have examined the report on the lower Colorado River delta by Mr. Epes Randolph and the proposal of the Southern Pacific Railroad, and have to respectfully submit the following remarks:

The Southern Pacific Railroad Co. should, of course, be paid for its work at the request of President Roosevelt in 1907, as recommended by two Presidents of the United States.

With reference to putting the river back into its old channel, I have to say that all interested in lands in the Colorado River delta desire it, for by doing so and leveeing the river some 400,000 to 1,000,000 acres of land may be converted from grazing or waste land into irrigable land worth, when irrigated, not less than $100 an acre—all in Mexico—and, if the river be successfully maintained there, the levee will also cover lands in Imperial Valley.

There is, then, a very great interest behind this plan, all in Mexican lands, owned in great part by Americans. For lands in the United States this project is not necessary nor, in my mind, even desirable.

First. Because it will be costly to maintain as well as construct a levee subject at any moment to attack and destruction by caving or scour.

Second. It will result in raising flood level of the Colorado and then make more costly our own irrigation works. On the contrary, it would remove a great part of the danger to our lands and to Imperial Valley if the bed of the Colorado were lowered from 5 to 10 feet, and this result will be at least approximately attained by allowing the river to follow its present course, via the Abejas, a shorter line to sea level, and a lower water level will continue until the regimen of the river is restored.

Third. All lands in the United States may be best and most securely protected against damage by overflow by fixing the Colorado in its present channel as far as to the Abejas River or the Arizona-Mexican boundary line and by adhering to the line of the California Development Co.'s levee north of Volcano Lake.

Fourth. I do not place any importance in the fill of 10 feet in Volcano Lake. Naturally, sediment has settled in still water at the foot of the slope. The rim of Volcano Lake has not risen, but it will probably be built up several feet by deposits, and without danger, necessarily, to American lands.

Fifth. Nor do I see any basis for the estimate that the rim of Volcano Lake, which is now 34 feet above sea level and has been so high for many years, will be 40 feet above sea level in four years. The sediment from the overflow, the amount of which is quite well known, has several hundred square miles of area over which it must be deposited, and over this area a very great proportion of the sediment of the high-water discharge of the Colorado River has been deposite for countless years. The special board recommended that Volcan Lake be built up to at least 44 feet above sea level.

(6) Even if the land were filled up to 40 feet or to 44 feet, I d not see why levees can not be reared upon land at that height, an with great ease and satisfaction. Mr. Randolph's levee is on lan deposited by the Colorado and raised above sea level 60, 70, 80, more feet, and he still proposes levees thereon, and the bases of levees will continue to rise indefinitely. In my opinion it will t at least 20 years to raise the rim of Volcano Lake 10 feet.

(7) Regarding the interests of the United States, it is not visable to keep the Colorado at its higher level in its old chann continually lengthening itself out by deposits in the gulf and rais its slope line, and threatening breaches into the Alamo River thence into Salton Sea, whereas long life to the Yuma irrigat

project, safety against overflow, and economy will best be subserved by leaving it on the shorter course and sunk as deep as may result therefrom within its banks.

(8) To revet the banks in the most substantial way yet developed and as applied along our western rivers, as far as a breach directly into the Imperial Canal or Alamo River can take place, then to construct and riprap the levee north of Volcano Lake, is in my mind the best possible solution in so far as affects the interests of the United States. Silt-catching and current-steering devices are alluring, but elusive, as shown by years and years of trial by engineers attracted by their apparent effects, which effects can not be controlled or fixed.

(9) If the river levees be built, inasmuch as the slope alongside will be in some stretches as much as 3 feet to the mile, whereas the river slope is about 1.3 feet per mile, there is danger that the river will cut a new course alongside the levee whether the burrow pits be on the land side or not, just as in the case of the Ockerson Levee, unless groins or spurs reaching above high water be built of such length as to constrain it to follow down its old channel and prevent longitudinal scour along the levee. Such groins or spurs are not shown in the plans submitted.

For the same reason, if the levee be built and the Abejas break closed, the levee should be built at least one year before closing the break, in order that the levees might be properly consolidated and vegetation have time to thickly cover in front of it before subjecting it to scour and wave wash.

(10) The Ockerson Levee is now being repaired north of the Abejas River, so that some of the work, estimated at $1,500,000, has been done. That price seems high. Other than above expressed, I have no adverse opinion.

I do not agree with the general plan submitted so long as the United States has all the work and expense with no adequate interest therein, and when desired results can be obtained at less cost and risk.

(11) The greatest and most imminent danger to United States lands and property lies in a possible breach in the banks and levee on the west bank of the Colorado River in the first 8 miles below the Mexican-California boundary, thus admitting water directly into the Imperial Canal, and the plans of Mr. Randolph do not provide against such danger in any adequate way. It is apparent that this particular part of the bank and levees should be made secure before going below the Abejas River under any project.

(12) These remarks are all based upon the idea that we are concerned in protecting our own lands and property in the most direct, certain, and economical way, and not in the best way of reclaiming lands in Mexico and protecting our lands indirectly as an incident of such reclamation, but at great risk and cost. If we owned the Mexican territory, then we would be justified in building the proposed levee.

The views expressed above are in substantial accord with the recommendations of the special board, except that I believe fixation of the banks of the Colorado by revetment to be a sine qua non, without which levees become temporary expedients, subject to destruction by caving, while the board majority puts levees in first place.

In studying the problem of the lower Colorado River, especially floods and rate of deposit of sediment, the fact of the accelerated rate at which the conservation of flood waters for power and irrigation, by reservoirs at headwaters of streams fed by melting snow and by precipitation over their higher drainage areas, is progressing must be taken into account. Doubtless, in time, all water precipitated in the arid region will be harnessed and made to work its way to the sea or be drunk by the soil or returned to the air. The floods in the Colorado are now being diminished by reservoirs and irrigation systems, and the amounts of sediment carried varying likewise. Long before a levee of reasonable height north of Volcano Lake will be overtopped by sand, sand or silt may cease going there in injurious volume.

Respectfully submitted.

W. L. Marshall,
Consulting Engineer.

Department of the Interior,
Washington, January 5, 1912.

The Secretary of the Interior.

Sir: In the memorandum report I sent in to-day concerning the proposition of the Southern Pacific Railroad to restore the Colorado River to its former channel, from which it departed last year via the Abejas River and Hardy, Colo., I omitted some reasons bearing on corporate plans and political or international matters that at first I thought best to keep out of the report, but I now, after reflection, think the following should go with the report I made if it meets with your approval.

The controlling reason I have to give against building the levee proposed by Mr. Randolph is a political one.

If the United States continues to reclaim Mexican lands without acquiring any right to maintain or control the works, or even to take water through Mexican territory, we will soon lose any basis for negotiations with Mexico, having given her everything practically for nothing.

Our lands are now practically at the mercy of Mexico; but perhaps, if the flooding of her lands is continued, she may consent to settle by treaty the whole question. I think we have some right to demand that the Colorado be fixed in position as the boundary line and that we should be allowed to revet its banks for that purpose and to levee it throughout this extent.

This is the main part of the special board's project relating to levees and bank protection as far as to the Abejas River, leaving the larger project, including the closure of the Abejas break and the extension southward, to future discussion with Mexico.

Respectfully submitted.

W. L. Marshall,
Consulting Engineer.

BUILDING FOR PUBLIC ARCHIVES

BUILDING FOR PUBLIC ARCHIVES.

CARNEGIE INSTITUTION OF WASHINGTON,
Washington, D. C., October 30, 1911.

Hon. WILLIAM H. TAFT,
President of the United States.

Mr. PRESIDENT: I ask leave to lay before you the question whether in your next annual message a paragraph may not be inserted urging upon Congress the duty of providing for better preservation and care of the national archives by the erection in Washington of a national archive building. I make this suggestion because I am chairman of a committee (Admiral A. T. Mahan, Prof. J. B. McMaster, and myself) appointed by the executive council of the American Historical Association to urge this matter upon the attention of the President and of Congress, and because I regard it as a part of my functions as director of the department of historical research in the Carnegie Institution of Washington to do whatever I can to advance here the interests of historical investigators. At the same time I fully appreciate that if a proper installation, concentration, and organization of the national archives takes place, it will come about mainly because there are imperative reasons of administrative convenience in its favor, the needs of historical students, though not unimportant, being secondary.

At the present time the archives of the Government in Washington are in a most unsatisfactory and in many respects in a deplorable situation. Indeed, it is only in a general sense that we can speak of the Government archives at all. The usual practice has been that each bureau or division has, from its foundation in 1789 or later, kept its own papers after its own manner and in its own place. In spite of a certain amount of departmental regulation there may be said to be a hundred different deposits, cared for by a hundred different custodians on a score of different systems.

But want of uniformity in administration, though it works disadvantageously to public business in a thousand particulars, is only one of many evils. Greater perhaps are the evils of improper housing of the public records. In some departments and bureaus, especially the older ones and such as have had to do with pecuniary interests, papers have accumulated to an extent which makes it a physical impossibility to deal with them properly within the spaces of their present buildings. In many instances they are crowded into wooden receptacles, which have been packed so closely that the records are almost inaccessible and under conditions offering a very high degree of danger from fire. Thousands of volumes and bundles are kept in places utterly unfit for such purposes, so dark that their abels can not be read, exposed to dirt and dampness, to pilfering and waste and destruction, moldy and neglected. In several cases, where departments have been unable longer to endure the pressure upon their buildings, they have colonized out large masses of their old papers, hiring for their storage business buildings by no means fireproof, in which again the evils of overcrowded and otherwise unsuitable disposition have been repeated. There are perhaps a dozen places in the city, some of them within the walls of Government buildings, in which if a fire of any magnitude should break out it could easily cost the Government, in papers relating to claims and the like, an amount several times greater than the cost of a proper national archive building.

These evils have been brought to the attention of Congress again and again. As far back as 1878 the Secretary of War adverted to them in his annual report. Secretaries of the Treasury, of War, of the Interior, and of the Navy, and Postmasters General have from time to time since then dealt with the matter in their official communications. Among the most recent and cogent of such statements are a letter addressed by Secretary Cortelyou to the Speaker of the House of Representatives on March 7, 1908, and a letter of July 26, 1911, addressed by Secretary MacVeagh to the chairman of the House Committee on Public Buildings and Grounds. All the departments whose heads have just been mentioned suffer in a high degree from the evils which have been described above as inherent in the present situation. But while Congress has at times discussed these evils and made some advance in the direction of their solution, the movement, which now has a history of more than 30 years without decisive progress, seems to need strong impulsion from the Chief Executive to bring it into final success.

While no doubt the dangerous and injurious conditions now prevailing could be palliated by the institution of a rational system of destroying useless papers, in place of the haphazard and perfunctory procedure now employed, yet it is plain from every reason of administrative efficiency and from the example of every other country that the only true solution of the difficulties under which we now labor is the erection of a single spacious and suitable national archive building.

As a matter of construction, this would mean the erection of a building closely resembling a honeycomb of library stacks. Such a structure ought not to cost as much as 50 cents a cubic foot. At the beginning, according to estimates which the departments severally furnished to President Roosevelt, a building having a capacity of a million and a half cubic feet should be erected, though a lot should be chosen which would permit increase of the building to four million cubic feet at later periods. In such a building the papers which each department might decide to be not needed for current uses could be deposited under fireproof security; could be systematically arranged, indexed, and cared for. Increasing masses of such material would be sent to such a building by the departments. Objections against sending papers out of their buildings would disappear as the advantages of proper arrangements came to be more appreciated. Such has been the experience of other countries after erection of archive buildings. By pneumatic tubes or other modern appliances any given paper could, upon call from a department, be brought to its building in a fraction of the time now consumed in difficult and often fruitless searches through ill-stored and ill-arranged files.

The fire in the Albany State capitol and other causes led the House Committee on Public Buildings and Grounds, in the last session, to take a more serious interest in this problem than ever before. A bill (H. R. 11850) was introduced by the chairman of that committee and referred to the committee, but proceeded no further. I earnestly hope that the President may see fit to bring the matter forcibly to the attention of Congress and the country by a reference to it in the annual message.

With this letter I take the liberty to send for your convenience a copy of the bill referred to, of a memorial offered last February by a committee of the executive council of the American Historical Association, and of a hearing before the House Committee on Public Buildings and Grounds last May.

I have the honor to be, with the highest regard,

Very respectfully, yours,

J. F. Jameson.

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

62D CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 510.

SUGAR IN FOREIGN COUNTRIES.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

REPORT BY THE SECRETARY OF STATE IN REGARD TO INFORMATION COLLECTED CONCERNING SUGAR IN FOREIGN COUNTRIES.

FEBRUARY 5, 1912.—Read, referred to the Committee on Ways and Means, and ordered to be printed.

To the House of Representatives:

I transmit herewith a report by the Secretary of State in regard to information collected by the department concerning sugar in foreign countries.

WM. H. TAFT.

THE WHITE HOUSE,
February 5, 1912.

DEPARTMENT OF STATE,
Washington, January 9, 1912.

THE PRESIDENT:

The Department of State has received during the last year numerous requests that it exercise its facilities of obtaining authoritative information concerning sugar in all parts of the world. These requests have included data relative to the beet root and cane crops of different countries; the extent to which sugar is made the basis of revenue by import duties, excise taxes, and local imposts; the forms of export duties and bounties; wholesale and retail prices; and various other matters. The department, through its diplomatic and consular officers, has been able to meet this demand for information.

At the request of the select committee of the House of Representatives, the department on June 27, 1911, issued a circular instruction to consular officers to investigate and report for their districts on the wholesale and retail prices of the grades of raw and refined sugar and the local conditions and charges affecting distribution and prices. The consular officers were further directed to make an historical résumé giving the wholesale and retail prices at five-year periods covering 25 years if practicable.

The department on October 19 followed this instruction by directing the consular officers to report on the wholesale and retail prices as of November 1, 1911, thus supplementing the reports made in response to the general instruction of earlier date. A practically universal increase in the price of sugar in the meantime had taken place, due to a shrinkage in the cane crop of Cuba as compared with the previous year and a prospective shortage in the beet crop of Europe in consequence of the drought. By calling for the prices as of November 1 it was possible to determine how great had been the increase in prices in the various countries.

An impetus was given to the inquiries by the general knowledge of the cane and beet crop deficiencies. There was a widespread demand for trustworthy intelligence as to the extent of these shortages and the prospect of the respective crops for the future. This desire was met by telegraphic instructions issued on October 3, 1911, to the consular officers at the capitals of the sugar-producing countries to report regarding the season's crop and the surplus available for export, and also the outlook for the next season, with special reference to the estimated surplus available for export. This intelligence, being of immediate interest, was given publicity as fast as received, and contributed to a definite understanding of the prospects of sugar production throughout the world. It enabled a reasonable judgment to be formed of the basic economic conditions governing the price of sugar.

The reports received in response to the instructions of June 27 and the supplementary instructions of October 19, 1911, have been transmitted in their entirety to the select committee of the House of Representatives. In addition to the information specifically called for by the department many of the consular officers have reported interesting facts concerning the increase or decrease of production, importation, or exportation of sugar in the countries in which they are stationed and the general state of the sugar industry. An analysis of some of the salient points of the information contained in these reports may now be given.

One of the most striking facts brought out is that sugar, a product of universal popular consumption, is also a commodity of universal taxation. Its economic relation to the fiscal policies of governments is apparent. It is a source both of customs and of internal revenue by means of import duties, by taxes on consumption in the form of national excise duties, and by further taxes on consumption in the shape of local or municipal charges, such as the octroi.

The national economic and fiscal policies take a wide range. By some countries sugar is treated solely as a source of revenue. Among these are the United Kingdom, the Netherlands, Belgium, Switzerland, Greece, and Peru. By others it is subjected to high import duties, apparently for the purpose of protecting and developing domestic industries and with secondary regard to the revenues. Among these countries are Sweden, Roumania, Japan, Mexico, Brazil, Chile, and the Union of South Africa. Several countries seem to treat sugar both as a means of fostering native production and also of providing for national revenues. In this class are Russia, Spain, Italy, Canada, and Denmark.

Certain of the countries signatory to the Brussels conference, which abolished bounties on production, may be said to form a class by themselves in their treatment of sugar in relation to the import duties. The regular tariff rates of each country are in abeyance in so far as they exceed the 6 francs per 100 kilograms (or 52.53 cents per 100 pounds avoirdupois) which the conference permits as the maximum import duty that may be imposed over and above the excise duties of the respective countries where such duties exist. These countries include Austria-Hungary, Germany, and France. Some of these countries also remit the excise taxes on sugar when exported. It also may be noted that a number of the continental countries of Europe give preferential treatment to sugar from their colonies. Among these are France and Portugal.

Various methods for controlling and regulating prices obtain. Some Governments recognize and cooperate with combinations. The Russian sugar combination, for example, works in conjunction with the Government. Under the Russian system the import duties may be regulated at will by the Government and lowered when domestic prices rise. The ministry of finance, in consultation with the refiners who compose the combination, determines the quantities of sugar annually to be produced, placed on sale locally, and exported. The profits of the refiners are strictly regulated by the Government, the difference in price between refined and unrefined sugar being fixed by law.

In Spain a sugar manufacturers' association in 1907 secured the passage of a law prohibiting the installation of new refineries within 90 kilometers (56 miles) of existing ones; but this law recently has been repealed. The consular officers report that the Spanish sugar industry is virtually in the hands of a monopoly at present. Under Government auspices this organization has a retail store in each district which fixes retail prices.

A controlling bureau for Austria consisting of representatives of the refineries meets fortnightly at Vienna, fixes the output and prices, and regulates the other details of the business.

The Argentine Republic fixes a maximum price for domestic sugar by law. When local producers are unable to keep within this price the tariff is lowered and foreign sugar comes in to relieve the consumers. For example, from January 7 to April 15, 1911, the regular tariff rate, which is 9 centavos (approximately 9 cents) per kilogram on refined sugar and 7 centavos on raw sugar, was reduced to 7 centavos on refined and 4½ centavos on raw, because the price of national sugar advanced beyond $1.27 per 10 kilograms (22 pounds). Argentine sugar refiners, the consular officers report, for some years have limited the supply in accordance with the demand, in order to keep up the price, while allowing few importations.

A strong combination in Brazil maintains and controls prices on the domestic market, agreeing to sell surplusage abroad, sometimes at one-third the local Brazilian price. In 1907 an agreement was made by producers to join in determining how much to export and how much to offer locally at an advanced price. This plan was for a time in operation, and there have been attempts since it was discontinued to revive it.

Combinations of retailers' guilds and wholesalers' guilds and refineries influence the trade in Japan.

In Sweden a combination keeps the price just low enough to make imports unprofitable. An association of retail dealers in Gottenborg controls retail prices and enforces them strictly.

A single sugar company located at Sydney dominates the trade of Australia and New Zealand, and grocers' associations in the various parts of Australasia determine retail prices.

In Canada the refineries at Montreal are in control of the situation.

The reports of the consular officers are of special interest in the definite information they afford regarding wholesale and retail prices. It appears also that in some of the countries current quotations of the jobbing trade are not always of the price to the retailers, since the latter receive a discount on their total bills at the end of a fixed period, while in other places they receive an additional quantity of sugar, which is equivalent to a discount from the quotation on the total quantity bought.

The information of greatest popular interest, however, is regarding retail prices, since it is with these that the consumers are concerned. Retail trade methods also show marked variations in different countries and even in different parts of the same country. In very many cases it appears from the consular reports that the retailer does not look for a direct profit on sugar, simply using it as a means of advertisement and of attracting trade for his other stock. This practice is reported to prevail in parts of Russia, Austria-Hungary, Germany, France, Italy, Spain, Switzerland, the United Kingdom, Norway, the Netherlands, Denmark, Canada, and Australia. In a few instances, such as in Scotland and in Australia, it appears to have limited the advance in price last summer.

The difficulty of establishing an absolute standard of comparison for retail prices in the different countries and at different centers of the trade in the same country is manifest because there is much diversity in the grades and classes of sugar used. It is possible, however, to fix a comparative standard of the grades of white sugar in most common use from which the relative retail prices can be determined with a reasonable degree of accuracy. This has been done in the reports of the consular officers. An analysis and comparison of the retail prices has been made for the leading European countries and Canada by the bureau of trade relations of the department. The statement is instructive as showing the increase which took place between July and November, 1911. It appears from this analysis that a considerable variation in prices of similar grades frequently exists in different localities of the same country. It also appears that in countries where the retail prices were already very high, as in Spain and Italy, it was not possible to add materially to those prices during the advance of last summer. In Italy, for example, where in July the usual price was 14 cents per pound, the increase was but about one-half cent per pound. In Spain, where the July prices ranged in the vicinity of 10 cents per pound, actual decreases even took place in some cities.

In Russia, where a large surplus stock had been carried over from the preceding season, the Government kept the prices static. The sugar combination in Sweden, which had been enforcing a high price prior to the general deficiency in the sugar supply, found it difficult to make increases. In general, however, throughout the leading countries of Europe, as well as in the Dominion of Canada and in South Africa, there was an increase ranging from 1 cent per pound to nearly 3 cents, averaging perhaps not far from 2 cents per pound, on the varieties of white sugar in ordinary use in the respective countries. This analytical comparative statement is subjoined.

Respectfully submitted.

P. C. Knox.

Statement showing the comparative retail prices of sugar per pound in foreign countries, July and November, 1911.

[Compiled by the Bureau of Trade Relations, Department of State, from Consular Reports.]

Countries (and cities).	July, 1911.	November, 1911.	Increase.	Description of grades of sugar to which prices apply.
Great Britain:	*Cents.*	*Cents.*	*Cents.*	
London	4.0	5.5	1.5	Granulated.
Liverpool	4.0	6.0	2.0	Do.
Manchester	3.8	5.4	1.6	Do.
Leeds	4.1	5.6	1.5	English cane (granulated).
Glasgow	4.5	5.0	.5	Granulated.
Dublin	4.1	6.3	2.2	Crystals (Tate's twos, etc.).
Germany:				
Berlin	4.9	6.5	1.6	Fine soft white, second quality.
Hamburg	5.9	7.8	1.9	Granulated (refined).
Madgeburg	4.9	6.3	1.4	Do.
Nuremberg	5.0	6.7	1.7	Crystal powdered.
Cologne	4.7	6.5	1.8	Grade in general use.
Frankfort on the Main	5.2	6.5	1.3	Loaf (brode).
Breslau	5.2	6.7	1.5	Refined 1 coarse grain.
France:				
Paris	5.9	8.2	2.3	No. 3 white crystalized.
Marseille	6.1	7.9	1.8	Do.
Bordeaux	6.8	7.4	.6	Do.
Nantes	5.9	7.9	2.0	Loaf.
Lyon	6.5	8.3	1.8	Granulated.
Roubaix	6.6	8.9	2.3	Do.
Italy:				
Rome	14.0	14.6	.6	Centrifugal (refined).
Naples	14.0	14.5	.5	Do.
Genoa	14.5	14.9	.4	Do.
Venice	14.5	14.5	....	Refined.
Milan	11.7	12.7	1.0	Do.
Austria-Hungary:				
Vienna	6.5	9.0	2.5	Crystal.
Budapest	6.8	8.3	1.5	Granulated.
Carlsbad	8.4	9.8	1.4	Do.
Prague	7.3	9.1	1.8	Cones (refined).
Trieste	8.9	9.1	.2	Squares and cubes.
Russia:				
Moscow	8.3	8.3	....	Refined, in loaves.
Odessa	7.4	7.3	[1].1	Do.
Riga	8.6	8.7	.1	Loaf.
Warsaw	7.2	7.2	....	White crystal.
Switzerland:				
Geneva	4.4	6.1	1.7	Pounded refined.
Zurich	5.1	6.1	1.0	Loaf, granulated.
St. Gall	4.9	7.3	2.4	Best white.
Berne	4.2	6.2	2.0	Loaf, in sacks.
The Netherlands:				
Rotterdam	8.2	10.9	2.7	Refined.
Amsterdam	8.7	10.9	2.2	White refined superior.
Belgium:				
Brussels	5.4	6.4	1.0	Refined, in grains.
Antwerp	7.0	8.5	1.5	White, powdered.
Liege	4.8	6.2	1.4	Crystallized, in bags.
Denmark:				
Copenhagen	5.0	6.6	1.6	White granulated.
Sweden:				
Stockholm	8.0	8.5	.5	Refined granulated.
Gothenburg	7.7	8.3	.6	White household granulated.

Statement showing the comparative retail prices of sugar per pound in foreign countri July and November, 1911—Continued.

Countries (and cities).	July, 1911.	November, 1911.	Increase.	Description of grades of sug to which prices apply.
	Cents.	*Cents.*	*Cents.*	
Norway:				
Christiania	6.3	8.2	1.9	Granulated glebe white.
Bergen	6.3	7.9	1.6	Do.
Spain:				
Valencia	8.7	8.7	....	Refined lump.
Madrid	12.2	11.5	[1].7	Loaf.
Malaga	9.4	9.4	....	Refined white cane blocks.
Jerez de la Frontera	11.9	10.2	[1]1.7	Cane loaf.
Seville	10.5	10.5	....	Cut loaf.
Turkey:				
Constantinople	5.1	6.2	1.1	Trieste square sugar.
Roumania:				
Bucharest	10.1	11.8	1.7	Loaf and granulated.
Greece:				
Athens	11.4	13.1	1.7	Austrian lump.
Patras	12.3	13.3	1.0	A 1 fine white.
Servia:				
Belgrade	8.7	9.7	1.0	Grade in general use.
Union of South Africa:				
Cape Town	5.0	7.0	2.0	Best grade granulated Australian.
Canada:				
Halifax	5.5	7.0	1.5	Standard granulated.
Montreal	5.5	6.5	1.0	Do.
Ottawa	5.0	7.0	2.0	Do.
Niagara Falls	5.5	7.0	1.5	Do.
Winnipeg	5.5	7.0	1.5	Do.
Vancouver	6.1	7.0	.9	Do.
Victoria	6.2	7.5	1.3	Do.

[1] Decrease.

NOTE.—In a few instances the prices stated are approximate. The prices in the first column are as o different dates throughout July (in a few instances August), 1911. The prices in the second column ar uniformly as of Nov. 1, 1911.

62d Congress, 2d Session } HOUSE OF REPRESENTATIVES { Document No. 521

CONSERVING THE RIGHTS OF PIMA INDIANS ARIZONA

LETTERS AND PETITIONS

WITH REFERENCE TO CONSERVING THE RIGHTS OF THE PIMA INDIANS OF ARIZONA TO THE LANDS OF THEIR RESERVATION AND THE NECESSARY WATER SUPPLY FOR IRRIGATION

PRESENTED BY MR. STEPHENS OF TEXAS

February 8, 1912.—Ordered to be printed

WASHINGTON
1912

UNITED STATES OF AMERICA
GOVERNMENT PRINTING OFFICE

LETTERS AND PETITIONS WITH REFERENCE TO CONSERVING THE RIGHTS OF THE PIMA INDIANS OF ARIZONA TO THE LANDS OF THEIR RESERVATION AND THE NECESSARY WATER SUPPLY FOR IRRIGATION.

SACATON, ARIZ., *January 29, 1912.*

Hon. JOHN H. STEPHENS,
Washington, D. C.

DEAR SIR: I write a few lines to you. We want J. B. Alexander to be punished, because he really did bad things while he was here at Sacaton. All the Pima Indians don't want well water. The well water is no good for our lands. We want you to help us and do for us what we need.

Very respectfully,
NARCISSE PORTER.

SACATON, ARIZ., *January 29, 1912.*

Mr. JOHN H. STEPHENS:

To-night I will say a word to you about the wells; that we do not want well water to irrigate our lands with because it will become alkali in two or three years, and we want you to try and do what you can for us Pima Indians.

I want J. B. Alexander to be punished in some way because he made all kinds of trouble at Sacaton for many years. He ought to be punished.

From yours, truly,
JOHN C. SEOTO.

GILA CROSSING, PHOENIX, ARIZ.,
January 23, 1912.

Hon. SCOTT FERRIS,
Washington, D. C.

DEAR SENATOR: Water conditions here are very poor. We haven't enough to irrigate 10 acres the year around. Part of the time we have to use seepage water from the river bed. This is injurious to our land, because of the alkali it contains. We are very poor; we average yearly $70, exclusive of the firewood we are permitted to sell occasionally. We used to be independent financially, before the white man cut off our water above. Our only hope to prevent our becoming paupers is the building of the proposed San Carlos Dam and the restoration of our water rights in the Gila River. We beg your influence and aid in this matter—is before Congress, we believe. We trust you will make use of the opportunity to help us. The inclosed pamphlet will give further information.

Yours, truly,
HOWARD SANDERSON.

THE PIMA INDIANS RELATE THE STORY OF THEIR WRONGS.

AN APPEAL FOR JUSTICE.—THE PIMA INDIANS OF ARIZONA APPEAL TO CONGRESS AND THE PEOPLE OF THE UNITED STATES FOR REDRESS OF THEIR WRONGS.

PIMA INDIAN RESERVATION,
Sacaton, Ariz., December 29, 1911.

"THE WHITE MAN'S FOOT."

At the coming of the white men, and we know not how many ages before, the Pima and Papago Indians owned and inhabited the country north from the Mexican line and including the valleys of the Gila and Salt Rivers. These two tribes spoke the same language, but the Pimas (river people) were engaged mainly in agriculture while the Papagoes (desert people) depended mainly on stock raising for a living.

Reports of Army officers and others will show that these Indians were kindly disposed toward the whites, furnishing food, shelter, and guidance to many an unfortunate pioneer.

In the days when Arizona was the rendezvous of outlaws and desperadoes, the white traveler found safety among the Pimas; the United States Army also found faithful and effective help in the friendly Pimas while subduing warlike tribes in this part of the country.

Before these hostile tribes were conquered but few white settlers were attracted to the Pima valleys, but after peace was made the white pioneer was not slow to see the advantages offered by the rich soil, mild climate, and irrigating waters of the Gila River. Now, while the desert is vast, the supply of good water for irrigation is limited. As early as 1888 the agent in charge of the Pima Reservation in an official report said:

> Considering the vast surrender of natural wealth made by these Indians to the Government, including, besides fertile valleys, many rich mines that have already yielded millions in gold and silver and copper, to say nothing of the untold mineral wealth lying still undeveloped, but little is done toward their support. No rations and no annuities are issued to them. Outside of education and protection to their land and water rights they can be termed substantially a self-supporting people.
>
> Nothing but mesquite, sagebrush, and cactus will grow on this or any of the reservations under my charge without irrigation. Therefore when it is considered that all the grain raised is by the unaided efforts of the Indians no commendation is necessary from me. All the ditches have been made by them without the aid of surveying instruments or engineering advice. There is not a thrasher or grain fan on any of the reservations. There are some splendid specimens of physical strength, both male and female, among these Indians. * * * The lands near their reservations are being rapidly taken up and constant encroachment upon their water rights will occur unless the agent is vigilant and energetic in the discharge of his duties.

FAMINE THREATENS THE PIMAS.

In 1901 the agent wrote:

> In my last report I expatiated on the starving and helpless condition of the Indians under my charge and the necessity of the building of a storage reservoir by the Government. Practically the same conditions exist now, and the experiences of the past year have confirmed me in my opinion and emphasized the need for the reservoir. After putting forth every possible effort (such as white men would never make) to raise a crop and make themselves self-sustaining, these worthy Indians are again stranded on the desert with scant provisions sufficient for only a few weeks' subsistence.

A MEANS OF RELIEF.

> Recommendation (from same report as above): That a reservoir be constructed on the Gila River for impounding the flood waters to irrigate the Gila River Reservation which contains sufficient fertile soil to sustain all the Indians of this agency and make them self-supporting, independent, and a happy people. That Congress be asked to build this reservoir at once, thereby giving the Indians work to make them self-sustaining until their lands can be irrigated.

In his report for 1902 the agent says:

> The assurance we now have of the building of the San Carlos reservoir through the passage of the national irrigation law, which grants the necessary power to the honorable Secretary of the Interior to furnish water for these worthy people, opens up a new era of greater activity, brightens the dark path they have so long traveled, and inspires new hopes of a better and happier life merited by the patience and endurance of the Pima.

FAITHLESS GOVERNMENT OFFICIALS.

About two months after the above report was written, J. B. Alexander took charge of our agency, and from the very first he seemed to place himself across the Pimas' path, between him and his river water. So far as we know he never tried in any way to secure river water for us. During Alexander's administration Ira O. Deaver and Oliver C. May were sent up the Gila River to get names of the white people who were taking water from the river above the reservation. On June 10, 1904, Superintendent Alexander reported that all data relative to the recovering of water to the Pima Indians by judicial proceedings had been furnished the district attorney and that in consultation with him the attorney had said that "there are 960 persons using water from the Gila River above the point where the Pima Indians divert the water of the Gila for their lands; that there is no doubt but that the case could be taken up and prosecuted to a favorable ending," etc. (Excerpt from Report Commissioner Indian Affairs, 1904.)

No benefit came to the Pimas from all this. Along about this time W. H. Code was appointed irrigation engineer for the Indians. We have not the papers to show just what the speculators and politicians of the Salt River Valley had to do with the appointments of Agent Alexander and Engineer Code, but the events which followed speak loudly. Before these men came on the scene, Government engineers, in pamphlet No. 33 (U. S. Geological Bureau), had recommended the San Carlos Reservoir site as the best in this part of the country. But some time between August 15, 1902, and July 25, 1903, it seems a reservoir was decided upon for the Salt River Valley instead of the Gila River Valley. The Pimas were told that much of their reservation could be irrigated from the Salt River Reservoir, and Alexander and Code at once began talking of underground water for the Indians. To this the Indians objected, as they had seen the bad effect of seepage water on their fields and knew the well water was not good for irrigation like the Gila River water. In their trouble the Pimas went to their old missionary, Dr. Cook, and told him of their experience with seepage water. He listened to them, visited their fields, and helped them to secure samples of well water for analysis.

A CARNIVAL OF GRAFT.

In pamphlet No. 33, referred to, the estimated cost of the San Carlos Reservoir was about $1,000,000. With the beginning of Alexander's administration $40,000 a year was appropriated by Congress for the relief of the Pimas. This was of little use to the Indians, as often they would work for months without pay, many failed to receive pay for wood hauled to the agency, and as can be seen by reference to the reports of Inspector E. B. Linnen, both the Government and the Pimas were robbed in many ways by Alexander and his friends, though in the short time that Mr. Linnen was here he was able to learn of but few of the many crimes committed by them. Letters of protest were sent to both the Indian Office and to the Department of the Interior, as may be seen, probably, by referring to the files in those offices, but the Pimas received only insulting letters for the most part in reply. At one time, hearing that the Pimas were to send some one to Washington to plead their cause, Assistant Commissioner Tonner forbade any of them to leave the reservation, saying the Indian Office would look after their interests, etc.

STONES FOR BREAD—WELL WATER VERSUS RIVER WATER.

The correspondence between the Pimas (headed by the late chief Antonio Azul) and Commissioner Leupp regarding well water for irrigation will throw some light on the situation. Also in a letter of December 23, 1907, signed by Secretary Garfield, we find he states that "a competent and impartial board of engineers had decided against San Carlos," but we are not told the names of these competent engineers or we might have been better able to judge as to their impartiality than the honorable Secretary. In the same letter we find the implication that we had sent analyses of water from stagnant pools. This was not true. Why did not Government officials investigate and find the truth of the matter, which was that the water analyzed was from wells in constant use?

A WOLF IN SHEEP'S CLOTHING.

Code and Alexander also tried to get our missionary friend, Rev. C. H. Cook, to side with them against us. For a while Alexander taught a Sunday-school class and advised employees to attend church, etc., as a good Presbyterian. Code visited Dr. Cook as a friend, and in the course of conversation asked if he did not think the east end of the reservation enough for the Indians, leaving the west end—the best part, and that near the ranch of some 18,000 acres belonging to Code's friend and business associate, Chandler—for the white people. Mr. Cook is our true friend and has been with us for 40 years. He said, "No; I think the Indians need all the land they have." Since then Code and Alexander have disliked Dr. Cook. And so things went on. The Indians were not allowed to meet with and talk to Government officials who came to our reservation. Alexander and Code went on talking of the fine underground water and pumps, and Code recommended that 180,000 acres of our reservation lands be sold to pay for pumping plants. He never told what he knew—that the white men's pumping plants have all been failures in this part of the country, except for speculation. Also that no white man on the place would take the great Sacaton School pumping plant and farm watered by it as a gift if he had to keep and run it; that this land, at first better than most, is fast becoming worthless; even the farmer who helped Alexander rob the Government stating, in reply to charges against him, that the well water is ruining the school farm at Sacaton.

A MACHIAVELIAN SCHEME.

While concocting this scheme to make us pay over a half million dollars for about nine wells—only seven of them yet in running order—Code and Alexander never tell of our right to good river water without expense. The money already spent for "relief" and on the wells, all of which has been thrown away or stolen by rogues, would have nearly built the San Carlos Dam, but this would have put an end to the use of the Pimas' need of water as a means of graft and an end to the hope of speculators of securing the Indian lands for themselves; an end also to the hope of the Southern Pacific Railroad of securing control of the Gila River through the possession of the Box Canyon (San Carlos Reservoir site), and thus virtually securing control of all the irrigable land in the Gila Valley.

WICKEDNESS IN HIGH PLACES.

As the result of an investigation early in 1911, James B. Alexander, agent of the Pima Reservation, and a number of his friends and coworkers were found guilty of crime which included robbery both of the Pimas and of the Government and were suspended. Though but few of his crimes were unearthed, Alexander boasted that there were officials in Washington who knew all he had been doing and would have to see him through. If this is true the Pimas ask, Who are they? Since he was suspended and eventually, after a long period of uncertainty, dismissed as the result of the overwhelming evidence secured by Inspector Linnen, Alexander has gone up and down through the reservation at will, telling the Indians what he will do when he gets back to those who have told on him, and what for those who will help him. Early in the year (following his suspension) he brought many papers to be signed by the Indians, but if the Indian could read, he was usually in a hurry and could not wait for the paper to be read. Many Indians were told that they could only get the pay for wood or work of which they had been cheated if they signed these papers, etc. Now we understand that the papers stated that the Indians had already received the money which they never have received and were used to discredit Inspector Linnen's report of the facts.

THR CLOVEN HOOF AGAIN.

In May, 1911, an order came from the Indian Office to allot all the Indians 10 acres to a family at Santan under the wells on a small corner of the reservation where there are, perhaps, 5,000 acres that have been cultivated. The pumps were not finished. No knowledge had been gained to show the well water safe for use on the land. The pump at Sacaton, drawing water from six wells, with difficulty irrigates much less than 300 acres. We have no reason to think any one of the Santan wells would do better, if as well, and we must pay for installing the system as well as the running expenses, wear of machinery, besides the $500,000 or more contracted to be paid to the Salt River Valley Water Users' Association on account of the construction of the Roosevelt irrigation project. When this order for removal came so that the grafters could pick the sugar plums from the other parts of the reservation after we had been dispossessed, we began again to send more protests and petitions to Washington. At last, in October, 1911, Commissioner Valentine visited us at our earnest request, listened to our case, examined into the facts, and, as his speech (published in the Native American of the Phoenix Indian School) indicates, found what we had said was true. This was the first time in all these years that a Government official has given us a chance to state our case. We looked for relief when the commissioner returned to Washington, but now we hear that instead of listening to the report of an honest man, some officials are trying to force Mr. Valentine out of the service because he stands for the right.

THE SERPENT'S TRAIL.

The Pimas are still at the mercy of a temporary superintendent, who seems to be controlled by the dismissed J. B. Alexander. Employees are given to understand they need not look for favor or promotion if they side with the Pimas in their struggle for their land and water rights, etc., more than we have time to write. Can the United States Congress and the people of this country, whose money has been squandered by the rogues who have robbed us, come to our aid?

SACATON, ARIZ., *December 16, 1911.*

Some 20 years ago and all the time before that date we, the Pimas, had all the water needed to irrigate our farms, and we had no difficulty in making our living. Since that time, unless the rainfall was great, we have had to suffer more or less for the necessaries of life. The administration of the late President McKinley looked into the matter and a way was found out of the difficulty.

A great deal of flood water passes down here to the sea and does nobody any good. Mr. McKinley's engineers found a way of storing this water by building the San Carlos Reservoir. This would give the needed water to the Indians and besides leave plenty for the white settlers in the Casa Grande Valley. After Mr. McKinley's death the Indian engineer and whites of the Salt River Valley persuaded our Government to build the Tonto (also called the Roosevelt) Reservoir at a great cost. They also persuaded the Government to build electric power pumping plants, at a great cost, in order to supply the Indians with worse than worthless well water. The Pimas knew what this alkali water would do to their farms. They also had much of the water analyzed, and sent two men to Washington, but the Indian Office and the Reclamation Service refused to listen to them. The inspectors sent by the Government would not listen to our people.

Only of late the honorable commissioner, Mr. Valentine, was willing to see for himself and find out the truth in the matter. To expend about $540,000 on worthless pumps and well water is probably a scheme which those who engineered it do not wish to be reminded of. And the great Gila River, with its fine life-giving water, is just as willing to discharge it on the lands as to send it to the ocean, thus making thousands of happy homes for us Pimas and for the whites besides, at a small expense to the Government, which years ago was the steadfast friend of the Pimas, but not of late years.

ANTONITO AZUL, *Chief of the Pimas.*

For further information regarding Pima matters, address any of the following:

Kisto J. Morago, Harvier Cawker, Lewis D. Nelson, John Johnson, Jackson Thomas, business committee appointed by the tribe, Pima Agency, Sacaton, Ariz.

CONSERVING THE RIGHTS OF THE PIMA INDIANS OF ARIZONA.

INDIAN RIGHTS ASSOCIATION,
Washington, D. C., August 9, 1911.

Hon. JOHN H. STEPHENS,
Chairman Committee on Indian Affairs,
House of Representatives.

SIR: Your special interest is requested in the matter of conserving the rights of the Pima Indians of Arizona to the lands of their reservation and the necessary water supply for irrigation.

The Government is expending large sums of money in providing well water for irrigation of the Pima lands. These Indians are entitled, as a matter of right through prior appropriation, to the natural flow of the water of the Gila River, and justly claim that every step possible should be taken by the Government to secure for them the reestablishment and continuance of the use of the low-water-mark water for irrigation.

These Indians were the first settlers along the Gila River, and were self-supporting until immigrants nearer the source of the river diverted the waters for their own uses. The Government has so far failed to prosecute the necessary causes to establish and secure the continued use of these waters for irrigation and this notwithstanding the fact that these Indians have uniformly been loyal to the United States and formerly aided in suppressing the revolts of the warlike Apaches.

The Pimas and many of their friends feel that the continued use of well water for irrigation is, at best, in an experimental stage, and results from use of the flow of underground waters in different locations within their reservation is foreboding to them.

Directly affecting the Pimas' interests is the proposed disposition of the San Carlos Reservoir site by the Government. Every precaution should be taken to see that provision is made for the Pimas and that their right to the use of sufficient low-water-mark water is guaranteed to them in any negotiations had in the matter.

The inclosed letters and statements concerning these rights of the Pimas, we submit, reveal a condition that calls for investigation. Since many of these statements are made by Mr. Herbert Marten, Sacaton, Ariz., within the Pima Reservation, we desire to state that on former occasions we have found statements made by him to have been very carefully considered and fully substantiated by investigation.

The Pimas are petitioning for an investigation, claiming that their land and water rights are in jeopardy. I file their request as an exhibit herewith.

We have been in close touch with the needs of the Pimas for several years and believe that their best interests demand an investigation within the reservation and vicinity thereof by your committee, so that the facts affecting their right to land and water may be made a matter of record for your future use in their behalf.

Very respectfully, yours,

S. M. BROSIUS,
Agent Indian Rights Association.

A PETITION ADDRESSED TO THE INDIAN RIGHTS ASSOCIATION BY THE CHIEFS OF THE PIMA TRIBE OF INDIANS.

JULY 31, 1911.

GENTLEMEN: We, the undersigned chiefs of the Pima Tribe of Indians, residing on the Gila River Reservation, Ariz., hereby petition you for assistance on behalf of our people.

We earnestly hope that you can bring the matter below mentioned to the attention of the Secretary of the Interior and present our petition before Congress before our water rights in the Gila River are forever lost to us:

(1) We do not want to be moved from our homes, but ask to have water supplied to our farms as they are at present situated, which we believe is entirely practicable.

(2) We earnestly request that our right to the natural low-watermark flow of the Gila River, or such part of it as we were accustomed to use before it was all stolen from us by the whites, be recognized by the Government, and that suit be brought to have such water restored to us.

(3) We further request that the Government will itself retain the ownership of the San Carlos Reservoir site and not give it away to private interests; and that if the reservoir be constructed (which construction will completely shut off the flow of water in the Gila River), that such part of the natural constant flow of the Gila River, as our land is entitled to receive by prior right of use of said water be furnished to us out of the reservoir perpetually.

(4) We have no confidence in the wells which are being put down by the Government to supply a small part of our land with assured water. The machinery is complicated and expensive and the water bad, and such a system is not suited to our needs.

We beg that the Government will order that no more wells be sunk at San Tan.

(5) We request that you try to get us gravity water, such as could be obtained in quantity from San Carlos Reservoir or the originally proposed Queen Creek Reservoir. We know that the gravity system of irrigation is the only practicable one for us, and we are acquainted with it, and the water supplied would be good water, and would not ruin our lands with alkali, as the well water is likely to do.

(6) We request that 10 acres with assured water be allotted to every individual of our tribe, and that the rest of the reservation be allotted as grazing land.

(7) We desire to have a representative of the Government sent by the Secretary of the Interior to confer with us, and to examine the

conditions pertaining to land and water on this reservation. So far, we have had no voice in the matter at all. We have been continually overreached by Engineer W. H. Code, who has attempted to force a system of irrigation upon us which is still in the experimental stage, and in which we have no confidence, because we and our ancestors have irrigated this land for centuries and know what the requirements of the land are.

JOHN HAYS, (His thumb mark.)
Chief of Sacaton Flats Reservation.
ANTONITO AZUL, (His thumb mark.)
Head Chief of the Pima Nation.
Chief HENRY AUSTIN. (His thumb mark.)
Chief JAMES TOMPSON. (His thumb mark.)
Chief HENRY ADAMS. (His thumb mark.)
Chief JAMES HOLLEN. (His thumb mark.)
Chief THOMAS. (His thumb mark.)
JUAN JACKSON. (His thumb mark.)
HAVELINE ENAS. (His thumb mark.)

THE "PROMISED" LAND.

A reference to the letter recently sent by the Indian Office to Allotting Agent Charles E. Roblin under date of April 29, 1911, reference 41789, land allotments, Gila River, will show that it is the intention of the Government to move the Pima Indians from the different parts of the Gila Reservation, where they are at present located, and establish them at or near the settlement of San Tan, under the system of wells now in process of construction.

As the heads of families everywhere on the reservation are to be allotted at San Tan, with their wives, it follows, of course, that they and their families will have to be moved to San Tan if they are to make use of their allotments. Many of these Indians will have to be moved a distance of 25 miles, and most of the allotments will have to be made on raw land.

It would seem by a reference to Exhibits 1 and 3 that in 1904 Mr. W. H. Code, now chief engineer of the United States Reclamation Service, recommended that out of the 180,000 acres of land which he proposed at that time that the Indians should surrender to the Government, a certain portion should be allotted to the Indians, namely, about 5,000 acres at Gila Crossing and 1,500 acres at Maricopa.

In the fore part of this same Exhibit 1 Mr. Code gives reasons why land should be retained by the Government for the Indians at the points specified, namely, because they are of great value on account of the constant supply of natural gravity water flowing there at all seasons of the year, sufficient to irrigate all the area of between four and five thousand acres at Gila Crossing and 1,000 acres at Maricopa, which Code proposed at that time should be reserved.

That was in 1904. Now, in 1911, it is suddenly proposed, without a word of warning, to move the Indians away from these valuable points of agricultural development on to an area of raw land to be watered by pumps at the other end of the reservation; of course, without warning.

Surreptitious measures have been the rule for years past with regard to what was to be done to the Pima Indians, as a reference to Exhibit 2, which is part of a letter written by Mr. Code, will show.

Why is this sudden change made?

Answer.—In 1904 there were no white settlers at or near the village or district of Gila Crossing, and the Indians were being let comfortably alone because nobody wanted their land at that time. Hence Mr. Code's proposal to allot them there.

The reason why no white settlers were near the village of Gila Crossing in 1904 was because the Indians had appropriated all the available constant water supply that could be obtained from the Gila River at that point and were using the same on their reservation, and there was as yet no prospect of obtaining water for this land out of the Salt River because the construction of the Roosevelt Reservoir had not been assured. Besides, there was not the rush for land around Phoenix at that time (1904) that has since occurred.

But now, since the completion of the Roosevelt Reservoir, it is known that all the cultivable land on the north side of the river at Gila Crossing can be supplied with Salt River impounded water, and in consequence this land has become of much speculative value, so that all the public land near the reservation line in the neighborhood of Gila Crossing has been filed on by white homesteaders.

The whites are very anxious that the land at Gila Crossing at present occupied by the Indians should be opened to settlement and are only waiting for a chance to rush in.

There are over 1,000 Indians, according to official count, at the settlement of Gila Crossing. These Indians have about 30 miles of canals, and Mr. Code's own report is submitted (Exhibit 1) to show that in the phenomenally dry season (Code's own words) of 1904 there were 1,500 inches of seepage water available at the Indian settlement of Gila Crossing. Code ought to know.

The following pertinent question may appropriately be asked: "If 1,500 inches of water flow constantly at Gila Crossing by force of gravity sufficient, as Mr. Code says, to irrigate between four and five thousand acres, and this also, according to Code's report, in the phenomenally dry season of June, 1904 (see Exhibit 1), why does Mr. Code want the Indians to abandon that much water in order to get a similar amount of pumped water from the wells at San Tan?

Code claims the maximum output of each well to be 250 miner's inches of water. This estimate is undoubtedly too high. Whatever the output may be theoretically, it is very doubtful if as much as 200 inches of water will reach the Indians' fields after it has been distributed through the laterals. Every farmer knows the loss sustained by seepage into the ground and evaporation as the water passes through the ditches in Arizona during the summer months.

However, allowing for the sake of argument that this 250 inches of water does really reach the Indians' fields after being distributed through the ditches, Mr. Code's estimate of 1,500 inches of seepage water at Gila Crossing would be equal to the output of six wells. Add to this the water supply of the Maricopas below Gila Crossing on the Pima Reservation, assured from the Salt River, sufficient, as Mr. Code says, to irrigate about 1,000 acres, equal to the output of at least one more well, and the result is that the amount of natural water flowing by gravity assured to the two villages of Gila Crossing and Maricopa equals the output of at least seven wells.

The cost of well is said to be, approximately, $10,000.

Thus this output of water, equal in volume to a stream covering 6,000 acres of land, from wells, according to Code's own estimate, would be worth the cost of seven wells at about $10,000 per well, or, approximately, $70,000—a very nice snap for the whites, without counting the land and improvements.

However, it is stated that even with this assured water supply there is not enough water at Gila Crossing for purposes of irrigation. This is undoubtedly true, and it is also true that there is seldom or never enough water for irrigation purposes anywhere, even under the reclamation system.

That this natural supply of assured water at Gila Crossing could be augmented by means of pumped water there is no doubt, nor is there any doubt as to the feasibility of extending the transmission line to Gila Crossing. But the cost is said to be prohibitive—as much as $4,000 per mile, it has been stated. This is obviously not true, and certain officials of the Reclamation Service, who should and doubtless do know, and whose names can be given, state that the transmission line can be installed at a cost of $1,700 per mile.

This estimate is nearer the truth, as will be apparent when it is known that the cost of the 40-foot towers which are used in constructing the transmission line strung between them cost but $50 apiece laid down at Mesa, Ariz., and the transmission wire is No. 6 cable, composed of three strands of hard drawn copper wire, twisted together.

There are 16 of the said towers to the mile, and three strings of the said three-ply wire used between the said towers.

In taking this line down to Gila Crossing, a transformer station would be required midway between the end of the present power line as far as it is now completed and the terminus at Gila Crossing.

Allowing the cost of this transformer station to be $30,000 and the cost of the transmission line alone to be $1,700 per mile for 25 miles, this being about the distance from the end of the present power line to Gila Crossing, amounting to $42,500, it can be seen that the total cost of such transmission line would aggregate, approximately, $70,000. The supply of gravity water at Gila Crossing and at the Maricopa village some miles below it, which supply it is proposed the Indians should abandon in favor of pumped water at San Tan, has been shown, according to Mr. Code's figures, to be equal to the output of seven wells, at an estimated cost of $70,000, for which a transmission line might be installed to Gila Crossing.

Seeing that it would cost approximately $70,000 to get as much pumped water at San Tan as now is running at Gila Crossing by force of gravity, why not expend this amount of money on an electric transmission line and augment the natural supply of water at Gila Crossing with three or four wells, seeing that this additional supply would cost no more to pump there than at San Tan. Another advantage, amounting in a few years to big figures, would be that there would be no electricity to buy at a cost of nearly 1 cent per kilowatt hour for this natural gravity water nor any maintenance charges to keep up for the seven wells that would be required to produce an equal flow at San Tan. Moreover, in the case of pumped water, there is always danger of the permanent water plane of the country being lowered below the depth of the wells from various causes, thus necessitating the deepening of the wells at great additional expense, and perhaps at a very critical time for growing crops.

That this is not a delusion is seen by reference to a letter written to the Secretary of the Interior by Mr. Code under date of December 2, 1904.

> On March 3, 1904, the water level in all the bored wells stood 22 inches below the concrete floor of our tunnel. This measurement was made at a time when the pump had not been operating for several days, hence the level was assumed as normal. On October 21, 1904 * * * I found the normal water level to be 31 inches below floor of tunnel. This latter measurement showed a lowering of the water plane of 9 inches since last March. * * *

This year, 1911, the permanent water plane of the country in which the said wells are situated is 6 feet lower than it was at the time the wells were first started in 1904, and if it should still continue to increase in depth the situation will become not only critical but alarming.

These data are merely given to show that the plan to extend the transmission line to Gila Crossing would not be impracticable, as has been stated, nor attended with any more expense than a system of wells to take the place of a natural gravity water supply such as there is at that point. Indeed, such a plan would be attended with not only less expense, but greater advantages.

The people at Gila Crossing have enough assured water already to supply a large part of their acreage and would be better off as well as better pleased to be left alone by the Government rather than to be removed from their present homes onto a raw land supplied with water from pumps, which is not good water, though it may serve when augmented with much muddy flood water, and in this way only be free from the injurious effects on the land of pumped water alone.

Here is yet another pertinent question: Seeing that it is proposed by the Government in their letter from the Indian Office to Allotting Agent Charles E. Roblin, under date of April 29, 1911, to allot all the Indians on the north side of the river at San Tan, why was not water instead of electricity bought for them? Water, not electricity, seeing that such water can be delivered from the reservoir to the reservation on the north side of the river at different points. Such water is being distributed to the Maricopas on the north side of the river at the extreme west end of the Gila Reservation, sufficient, as Mr. Code says, to irrigate 1,000 acres (see Exhibit 1), and the whites are only waiting the time when Gila Crossing shall be opened to settlement to spread Salt River impounded water over what is still the Indians' land. The Maricopas get their Salt River impounded water by court decision. The Reclamation Service, under Mr. Code, would doubtless have preferred them to have pumped water, although such acreage of land in the Gila Valley as the Government has supplied with pumped water is assessed at the enormous rate of nearly $50 per acre i common with the acreage in the Salt River Valley which draws water from the Roosevelt Reservoir.

The difference is that the whites get the natural flow of good river water and the Indians get the electricity.

It was stated at the time that this deal was first proposed that the Roosevelt water could not be gotten across the Gila River for the reservation to water the south side of it, while on the other hand, it was quite easy to extend the transmission line and so secure power to supply both sides of the reservation land along the river with a constant water supply. Why, then, is the transmission line not now to be extended?

Why is only a small area on the north side of the river to be watered with electrically developed water, when, if the Government's plan were that all the Indians be moved onto such small area on the north side, gravity water could have been secured for the same? The reason is obvious. The whites want the land at Gila Crossing and are determined to have it at any cost and by any means. And the means being at present employed is to delude the Government, by the aid of some unscrupulous officials, into believing what is not true against the interests of the Indians, and to use the Government as a cat's-paw to pull the chestnuts out of the fire for the land grabbers.

Now, with respect to the Casa Blanca Indians located on the south side of the river.

Whatever may be said for or against extending the transmission line to Gila Crossing, why is it that the proposed nine wells which were to have been sunk at Casa Blanca will not now be put there, but the plan abandoned, and the Indians living at that village be required to move away onto a piece of raw land miles distant up the river?

The question is the more pertinent because the end of the transmission line is only about 4 miles from Casa Blanca and headed directly toward that place, and a point has already been determined upon by the Reclamation Service people from which the line may be slung across the river. The cost will be no more than the actual 4 miles of transmission line, as no transforming station will be required.

Is it to accommodate contemplated future white settlers that the power line has been left located so invitingly opposite Casa Blanca? Do the whites intend to use the Government in this case also to get for them this extremely desirable territory which the Indians have farmed and irrigated with fertilizing water for centuries, and where the Spanish conquerors first found them, until the land has become as rich as the Nile Valley and silt and humus have been deposited in places to a depth of several feet? And please note the following:

The Government has bought 1,000 horsepower of electricity for the Pima Indians. The motor with which each well is equipped can consume but 45 horsepower as its maximum, and no pump can be supplied with more.

At present there are but 10 wells constructed or in process of construction, and 3 more are contemplated at present. It is claimed that these 13 wells will supply 20,000 acres with assured water perpetually, which area is all the Government expects to assure a supply for so far as the Pima Indians are concerned.

Now, how much of the 1,000 horsepower of electricity contracted for by the Government for the Indians will these 13 wells consume? Forty-five horsepower for 13 wells equals 585 horsepower, or a little more than half of the supply that has been contracted for.

It is planned to use 150 horsepower at Sacaton Agency, but since the Indians' lands will get no benefit from this expenditure it should not be charged up against them. Where is the four hundred and odd horsepower of electricity not used going to be expended? This, allowing for some loss, would be sufficient to run some eight more pumps.

Again, why has the original scheme, thought to have been definitely settled, to equip the settlement of Casa Blanca with nine wells, been suddenly abandoned and the number of wells now contemplated, in addition to those completed or in process of completion, been cut down to three, all of which are to be drilled on the north side of the river, at San Tan, to irrigate raw land?

The whites will know just how much electricity there is to spare and just how to get it across the Gila River after they get possession of the Casa Blanca land. If it be said that more pumps will be installed at San Tan, so as to use up the balance of the horsepower contracted for in the interest of the Indians, that is not a good or just proposition, because the area of old cultivated land which may be watered from wells on the north side of the river at San Tan is a comparatively narrow strip, and only a limited amount of water could be distributed effectively over such an area.

Crops on raw land are poor at first and need very frequent irrigation.

But at Casa Blanca is some of the richest and oldest cultivated land in America, which might be watered to the greatest advantage by means of wells to augment the natural supply of gravity flood water, from which well water might be raised with some of the electricity, of which they have so great a surplus.

It is quite evident from a perusal of some of Mr. Code's former letters, and especially Exhibits 1, 3, and 4, that the sale of the west half of the Gila River Reservation is contemplated, and the present move to allot the heads of families, with their wives, and rush all the Indians up to one small corner of the reservation is an organized effort on the part of some unscrupulous schemers to accomplish a nefarious project, while blinding the Government to the true facts.

This is the more apparent because the Pimas have never been consulted with in regard to the proposed exchange of land for pumped water, nor in regard to moving them away from their present homes, but the Government's plans for them have always been kept up somebody's sleeve so that no man not in the secret had any accurate knowledge of just what it was proposed to do. Note the following by Code (Exhibit 2):

> Any move which would lead these Indians to think that the reservation was to be finally allotted and the surplus lands thrown open will result in much perturbation and discontent on their part and have a serious effect in successfully locating them under the contemplated system

No wonder that the Indians would be "perturbed" at such a proposition. These Indians have never taken up arms or killed any white people. Why were they not consulted before this scheme was hatched out?

Besides, under the latest plan to allot the Pimas all at San Tan, nothing is said any more about the 5,000 acres to be reserved at Gila Crossing with the 1,100 inches of water or the 1,500 acres to be reserved at Maricopa with Salt River impounded water sufficient to irrigate 1,000 acres. That has now become too valuable to leave to Indians.

And this brings us to a new part of the subject.

Why should 180,000 acres of the Pimas' territory be required in exchange for the pumping project recommended by Code, of which the cost was to be in the neighborhood of $500,000? This would mean less than $3 per acre for land on which the mesquite timber alone should be worth that amount and still leave the land. Raw land at the white settlements along the Gila River can not be bought for less than $75 per acre, and for land set to alfalfa at Buckeye, a white settlement some 20 miles below Gila Crossing, a price of from $100 to $200 per acre is asked and obtained.

Before the Indians are required to surrender any land, if ever they are required to surrender any, a competent estimate of the land to be surrendered should be made by the Government, so that the value of improved land, unimproved land, timber, and other values could be ascertained, and not a haphazard lumping off of a huge area be permitted without any valuation at all.

But Mr. Code does not ask for any valuation to be made of the land he proposes to have the Government "exchange" for a pumping plant. Probably, as he is not an ignoramus, he knows the value of the said land too well. Others do if he does not, and none better than the Pimas themselves, who have been required to give it up.

And if it be said that there is no such scheme in view, why the letter to Roblin? Why the plan to push the Indians off their farms on this west half of the reservation? Why the frantic haste to allot the land under the wells when there is not one-fourth enough of said land to go around?

It is stated in the letter of the Indian Office to Allotting Agent Charles E. Roblin, under date of April 29, 1911, that—

> The office does not deny the right * * * minor children to allotments of irrigable lands, but that it is its intention, unless future developments shall cause such course to be impracticable, to bring sufficient irrigable land within the reservation under ditch to afford allotments * * * of at least 5 acres * * * to all members of the tribe.

Unless such course be impracticable. It is manifestly impracticable already to allot the heads of families, the breadwinners, on one side of the river and the children on the other for reasons which can be given, and if the allotments are not to be made on the other side of the river (the south side at Casa Blanca), where it was proposed to put down nine wells, and to within 4 miles of where the transmission line has been extended, why are not whole families allotted together at San Tan until all that land has been allotted, instead of only the heads of families and their wives?

The specious contention is put forth that minor children would not make "actual" use of their allotments by reason of their age. What, then, would be the result of the present plan in the case of a family of 10? There are many large families.

Are these all to subsist on the meager product of 10 acres because the children could not make "actual use" of their allotments? Could not the head of the family use these allotments for them?

Some of these Indians have as much as 60 acres under cultivation now. A family of 10, be it stated, can not make a livelihood on 10 acres of wheat or barley, which are the crops at present mostly grown on the reservation, nor yet could they make a living on 10 acres of alfalfa, which is the white man's chief crop in Arizona. The Government seems willing, even anxious, in the case of the Indians, to believe the glowing reports of real-estate agents.

Would it not be manifestly impracticable to allot the heads of families on one side of a river like the Gila and the children on the other side, where the old and good land under cultivation at Casa Blanca is located, and which it was orignally proposed to allot the Indians, when several miles of territory would separate the different allotments, besides a roaring river in flood during the summer months, over which river there is no bridge, and this at a time when crops need daily attention?

Of course it will be found "impracticable." The whites will see to that after they have settled there. Why is the future tense made use of, as though it were not already impracticable, as Mr. Code very well knows.

The Indians were satisfied with the plan of allotment as proposed and outlined by Mr. Carl Gunderson, ex-chief allotting agent, and are entirely opposed to the present deep-laid scheme for their removal, in regard to which it is believed the Government does not know the true facts.

But why are the Pimas without water at all? For years they have begged the Government, through its agents, to restrain the whites above them from shutting off the water which by prior right belongs to the Indians after the river goes below a certain flow, but nothing has been done. The river water which the Indians originally had has been stolen away from them and now they are asked to buy it back.

Here are the figures: The acreage of land in the Gila River Valley forming part of the reservation, on which the Government has allowed itself to be assessed at the rate of over $45 per acre for the Indians, not for water, but for the right to buy electricity, embraces approximately 20,000 acres. This means a total cost to the Government of $900,000, to which must still be added an additional cost of $500,000 or more, according to Mr. Code's estimate, for wells, pumping plants, and power lines. But Mr. Code knows that it is costing the Government twice what was contemplated in the first place when the plan of reclamation by means of pumps was proposed, so that $500,000 additional must be added to the first $500,000, making an aggregate of some $2,000,000. The Indians are to be made to pay this amount to the Government, or a large portion of it, for supplying them with a wretched substitute of pumped water for what was originally theirs, and of which they were plundered under the very eyes of the Government, despite their protests and earnest appeals.

Among other strange things there is a huge flood-water canal built along the line of country occupied by the wells for the purpose of augmenting their supply or of dispensing with it altogether whenever the river is in flood. But the Pimas are able to get as much flood water as they require through their old canals. Why should this new canal have been made of such colossal size for so limited an area as it is proposed to reclaim under the wells?

And why should the canal fork into two branches near a point where the transmission line ends—a large branch and a small one? And why should the large branch be directed right straight for the Chandler ranch of 31,000 acres adjoining the reservation, and the small branch be directed toward the future new farms of the Indians which it is proposed they shall be compelled to make for themselves after their removal has been effected?

The Chandler ranch spoken of is comprised of land, most of which was obtained from the Government by fraudulent land entries.

By the terms of the Roosevelt reclamation project only 160 acres of this ranch can be supplied with water from the Roosevelt Reservoir, this area being the maximum that a single individual is allowed to buy.

It thus becomes imperative that water be secured for this ranch from some other source of supply. There is no source of supply on the Salt River, but what so handy as the great flood-water canal running through the reservation, destined supposedly to supply water to the Pimas—a canal big enough to drown out the whole Pima population.

The canal would have to be extended only a few miles to reach the Chandler ranch, and more than that it could water a large part of that portion of the reservation which it is recommended be thrown open to settlement.

There is another fact which must not be overlooked: A series of power stations is being put up by the Reclamation Service on this Chandler ranch. Anybody who knows anything at all about water in Arizona knows that pumped water is worthless without an additional supply of muddy river water mixed with quantities of silt and vegetable matter to overcome the injurious effect of the alkali contained in the well water.

Unless the Chandler ranch can secure flood water from some source the huge electric power plants now being constructed there will be of no utility. Be it noted again that the large fork of the great flood-water canal on the Pima Reservation is headed direct for this Chandler ranch.

The thing to be done is to prevent any more wells going down at San Tan, because if this scheme is carried out it will be said that the Indians will have to move, because the wells are already there, and the Indians will have to use them.

This would be an immediate prelude to the complete appropriation by the whites of all the water sources of value which the Pimas have left to them.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, April 29, 1911.

Mr. CHARLES E. ROBLIN,
Special Allotting Agent, Scottsdale, Ariz.

SIR: The attention of the office has been invited to the fact that at this time there are but 12,000 acres of irrigable land within the Gila River Reservation which have been brought under ditch and supplied with water for irrigation purposes. The irrigation system as now completed is supplied by pumping water from seven wells. But little use has yet been made by these Indians of the pump-water supply that has been available during the last year, because of a prejudice in their minds, based on repeated statements made by parties ignorant of the fact, that the water is not fit for irrigation, and that it contains minerals which will ruin their lands.

Although in the future it is proposed to increase the irrigable land within the Gila River Reservation to at least 20,000 acres, at the present time no definite plan or date for such increase has been determined upon. The last census of the Indians within the Gila River Reservation shows approximately 4,000 members, and when the entire irrigable area of 20,000 acres is placed under water there would be sufficient irrigable land under ditch to give each Indian 5 acres of irrigable land with assured water rights.

Section 17 of the act of June 25, 1910, provides in part:

> And whenever it shall appear to the President that lands on any Indian reservation subject to allotment by authority of law have been or may be brought within any irrigation project, he may cause allotments of such irrigable lands to be made to the Indians entitled thereto in such areas as may be for their best interests, not to exceed, however, 40 acres to any one Indian, and such irrigable lands shall be held to be equal in value to twice the number of acres of nonirrigable land and four times the number of acres of nonirrigable grazing land: *Provided*, That the remaining area to which any Indian may be entitled under existing law after he shall have received his proportion of irrigable land on the basis of equalization of land herein established may be allotted him in nonirrigable agricultural or grazing lands.

It is apparent under this act that each of the 4,000 Indians on the Gila River Reservation is entitled under the above act, if allotted at this time, to an equal share in the 12,000 acres of land now under water. This would mean a present per capita allotment of 3 acres of land and, with the extension of the irrigation system, a future allotment of 2 acres of irrigable land additional.

It is obvious that two allotments would be doubly expensive. It is also apparent that the two allotments would be located on different parts of the reservation and their agricultural development would be extremely difficult in the case of a single man, to say nothing of the head of a family attempting to farm not only his own allotments but those of his wife and children.

The office believes, therefore, that the time for the completion of allotments of irrigable lands on the Gila River Reservation has not actually arrived and will not arrive until the amount of irrigable land subject to allotment can be absolutely determined. It is believed, however, that the irrigation question is sufficiently determined for plans to be laid at this time for the allotment to each family of 10 acres of irrigable land. You are directed, therefore, to survey and lay off the irrigable lands now under water in tracts of 5 acres. You will then permit the Indians to select, and you will allot 5-acre tracts to each head of a family who is married, and to the wife of each head of a family. In case the head of a family has no spouse the oldest member of the family should be allotted.

If any available irrigable land remains after these allotments are made it should be allotted in 5-acre tracts to single males, preference being given to those able to utilize the allotment. The rights of the unallotted members of the tribe, who will be for the most part minor children who, by reason of their age at this time, would not make actual use of such irrigable lands as might be allotted to them, can be protected at a later date by allotments from irrigable land not yet under water. The matter should be fully explained to the Indians in order that they may understand that by this action the office is not denying the rights of their minor children to allotments of irrigable lands, but that it is its intention, unless future developments shall cause such course to be impracticable, to bring sufficient irrigable land within the reservation under ditch to afford allotments of at least 5 acres of irrigable land, with assured water rights, to all members of the tribe. These instructions are amendatory with regard to irrigated lands to those in office letter of November 14, 1910, approved by the department November 15, 1910.

Respectfully,

R. G. VALENTINE, *Commissioner*.

Approved, May 8, 1911.

FRANK PIERCE,
First Assistant Secretary.

JULY 6, 1911.

Honorable SECRETARY OF THE INTERIOR.

SIR: Quite recently the attention of the Indian Bureau has been called to the proposed allotment of tracts of 5 acres of irrigated land to each head of a family and to each male member of the Pima Tribe of Indians, in the San Tan district of their reservation in Arizona, as contained in a letter of instructions to Charles E. Roblin, special alloting agent, Scottsdale, Ariz., dated April 29, 1911, and approved by Franklin Pierce, Assistant Secretary, May 8, 1911.

The Pimas claim they were not consulted so as to ascertain their wishes and views of the matter which is of so vital importance to them, and it is admitted by Mr. W. H. Code, chief engineer of the Irrigation Service for the Indian Department, that such is the case.

On behalf of the Indians and their friends we file our protest against this apparently more or less arbitrary disposition of the Pima estate, and urge that no further action be taken in the matter of sinking irrigation wells for pumping water in the San Tan district of the reservation without first submitting the whole proposition to the Pima Tribe and conferring with them regarding the same.

The Pimas were the first settlers along the Gila Valley and were self-supporting until through lack of care by the Government they were robbed of the use of nearly all the water of the Gila River, which, by right, was theirs to use under the law of prior appropriation. They have secured the most fertile lands in the valley of the Gila, at Casa Blanca, Gila Crossing, and elsewhere south of the Gila River.

The Indians have been compelled frequently in the past to remonstrate against the proposed action of the Government in relation to the disposition of their lands. May 1, 1908, Hugh Patten and Lewis D. Nelson, delegates representing their tribe, addressed a communication to your office, protesting against the manner of allotting their land in 5-acre tracts as contemplated by the Reclamation Service, and gave substantial reasons for such protest. On May 7, following, the Secretary replied to their appeal and stated that there was no intention of making permanent allotments until the adaptability of well water for irrigation had been demonstrated by experiments and not until after the tribe had been consulted and their wishes in the premises considered. Again, during the year 1910, the Salt River Band of Pimas felt constrained to invoke the aid of their friends in a protest against the proposed allotment of 10 acres of grazing lands to each individual, while their brethren on the Gila River Reservation were scheduled to receive 40 acres for grazing purposes. This protest was presented to the Indian Bureau by the writer under date of December 22, 1910. It was shown in that case that the intention of the Commissioner of Indian Affairs had not been carried out, and that the Salt River Band had not been counseled with. The error was thereupon corrected.

As stated, the Pimas were not consulted, they claim, regarding this later move to allot in the San Tan district to heads of families, and they were not apprised of the intentions of the Government in the case until very recently. They claim they are opposed to the plan outlined which, at least, indicates the settlement of their whole tribe, as far as possible, in the San Tan district of their reservation, and it is understood that to carry out this project nine wells for furnishing water for irrigation have already been completed in the San Tan district, sufficient, perhaps, to irrigate 10,000 acres of land, and the plans have been formulated for sinking other wells in the near future which, when completed, will provide sufficient well water to irrigate about 12,000 acres, it is estimated.

During the early months of the present year Inspector Carl Gunderson presented to the Pimas in council a program of allotment of their lands believed to have been acceptable to them, and which they claim did not embrace any such plan of allotment as outlined by the Indian Office in its letter of instructions of April 29 last to Allotting Agent Roblin, providing for the sinking of wells exclusively in the San Tan district.

It is feared that the needlessly extensive dimensions (so far as Pima interests are concerned) of the flood-water canal already constructed on the north side of the Gila River are not in the best interests of the Pimas, nor, indeed, in their exclusive interest. The direction of the main channel of this canal toward the notorious Chandler ranch, located outside the limits of the Pima Reservation, is of a foreboding nature to the Indians, who have not felt that their best lands are located in that direction, and where but slight settlement has been made by them heretofore; the statement is made in this connection that large sums of money are being expended on the Chandler ranch for electrical works for irrigating purposes, which would seem to be unnecessary unless advantage is expected to be taken of the flood waters of the Gila River coming through this canal within the reservation, which has been, presumably, constructed for Indian uses.

The population of the Pima Tribe aggregates about 4,000 persons, 650 being resident in the San Tan district and 134 in lower San Tan and Stotonic districts. Thus it will be seen that less than one-fifth of the whole population are located in the section of the reservation where the wells are being constructed. The San Tan district is located north of the Gila River, while on the other hand Casa Blanca, Gila Crossing, and other populous districts are located south of that stream, and during periods of high water in the river, which often continue for several weeks during planting season, the river is dangerous for crossing and constitutes an almost impassable barrier between these Indian settlements.

If the proposition to allot heads of families of all the tribe, no matter where now located, at San Tan, is carried out, nearly every family in the tribe will of necessity be separated, the parents allotted at San Tan, the children at various and distant points across this dangerous stream; this must be the logical conclusion, unless we proceed on the theory that it is the ultimate purpose of those connected with this matter to gather all the members of the tribe in one settlement around the San Tan district.

The population of the Casa Blanca district is said to be about 800 persons, and the Pimas claim this is one of the most fertile sections of their entire reservation, and experience has shown that the Pima is a competent judge of land and water values. It is stated, furthermore, that the San Tan district does not possess so desirable lands as Casa Blanca and other settlements which are located on the south side of the Gila River.

It would seem to be very harsh treatment to take such action as will, in effect, forcibly remove the Casa Blanca and other settlements of Pimas from their ancestral homes comprising the better lands of the entire reservation. While Engineer Code claims that it is not the intention to remove the 1,200 Pimas from their homes around Gila Crossing, in view of all that has been stated it is reasonable to conclude that it may later develop that this will be urged as advisable and more especially so if additional wells are permitted to be sunk in the San Tan district.

While the earlier estimates were of a larger acreage, it is now stated by Mr. Code that about 7,000 acres may be provided with well water from the nine wells already constructed. This is more than ample for the Pimas already settled in the San Tan district.

This latest cause for apprehension regarding their removal to San Tan revives the distrust in the minds of the Pimas that it may be the purpose of the covetous white settlers to cause the Indians to be allotted in the eastern portion of their reservation, so that the lower and western portion will be available for settlement by outsiders, notwithstanding the assurance of the Government that no portion of their reservation should be sold, but that in addition to the 10 acres to be allotted, which it is hoped will be susceptible of irrigation, 40 acres of grazing land will be selected for each member of the tribe along the Gila.

We are assured by the Land Division of the Indian Bureau that there is no intention on the part of that bureau to remove any of the Indians from their present homes, but from the conditions as presented herein we are led to feel that there is a very grave danger that the Indian Bureau may be led into adopting a policy, unconsciously, from which it will be difficult to withdraw when more of the facts are open to the public gaze. In view of this claim of the Indian Bureau, not to disturb the present homes of the Pimas, and the apparently dangerous policy being pursued in relation to the sinking of wells for irrigation in the San Tan district alone, it is due to that bureau, to the Indians, and the public that a clear and comprehensive statement should be made of the matter after the Pimas have been heard.

Very much more might be said in opposition to this plan to sink all wells in the San Tan district and to abandon the idea of providing nine wells in the Casa Blanca settlement, in face of the fact that the electrical-transmission line is now within 3 miles of the Casa Blanca lands and may be a shorter distance when the transmission line is extended to Sacaton Agency, as contemplated.

The obvious result of this plan of confining the establishment of wells in the San Tan district will be to compel the Casa Blanca and other Indians to migrate to the former district, after which the opening of the remaining lands to white settlement will be comparatively easy. The Indians fear this condition as imminent and, with their friends, see no difference in the final result between this and the more direct compulsory method of removal at the outset, which will be in violation of the good faith of the Government toward these Indians. On the showing made, by petition of the Indians to the Indian Bureau and the statements herein, we trust that you will immediately direct that before any additional wells are established at San Tan a thorough investigation and report thereon shall be made to you by a competent official equipped with a knowledge of irrigation and the needs of the Pima Indians who is not closely connected with the Indian Department nor the Reclamation Service, and that instructions shall be issued in such connection that the Pima Indians, the parties most deeply interested, shall be freely and fully conferred with in the matter, in the interest of fair play and justice to this tribe.

Very truly, yours,
S. M. Brosius,
Agent Indian Rights Association.

Exhibit 1.

Department of the Interior,
United States Indian Service,
Los Angeles, Cal., June 30, 1904.

To the honorable Secretary of the Interior,
Washington, D. C.

Sir: * * * In behalf of the Indians I heartily concur in this proposition with the following exception: Within the 180,000 acres which it is proposed they should surrender are embraced two Indian settlements, to wit, Gila Crossing and Maricopa, and these settlements both have an assured (water) supply, even in the present phenomenally dry season. At the former point there are about 1,500 inches of seepage water available from the Gila River, or sufficient to irrigate between 4,000 and 5,000 acres. At the latter point the Maricopa Indians have, by recent court decision, been adjudicated sufficient water from the Salt River to irrigate about 1,000 acres. Would suggest, therefore, that the Indians surrender all of the said 180,000 acres with the exception of 5,000 acres at Gila Crossing, and 1,500 acres at Maricopa, at which points land should be allotted to them.

Very respectfully,
W. H. Code,
United States Indian Inspector.

Exhibit 2.

Department of the Interior,
United States Indian Service,
Los Angeles, Cal., November 1, 1909.

The Secretary of the Interior,
Washington, D. C.

Sir: * * * Any move which would lead these Indians to think that the reservation was to be finally allotted and the surplus lands thrown open will result in much perturbation and discontent on their part and have a serious effect in successfully locating them under the contemplated system. * * *

Very respectfully,
W. H. Code, *Chief Engineer.*

Copy to Director Reclamation Service.

[Excerpt from letter written and signed by Code.]

EXHIBIT 3.

LOS ANGELES, CAL., *December 2, 1904.*

To the honorable the SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: * * * On recent further examination of the contour maps of the Gila River Reservation which were lately forwarded me, I noted that I had overlooked the fact that the Indian settlement of Casa Blanca was in the territory which it is proposed that the Indians should surrender. * * *

While the character of the improvements in this Casa Blanca settlement are not expensive, and there is no permanent water supply, the Indians would probably be loath to leave their homes, and, as the farms are situated near the Gila River, water could be developed for them by pumping, and there would be no need to change their location. * * *

To recapitulate, I now recommend that in exchange for the pumping facilities detailed in the report of June 30, 1904, the Indians surrender lands described as follows:

All of that portion of the Gila Reservation, Ariz., west of and including range 4 east, with the following exceptions:

First. That portion of the east half of township 3 south, range 4 east, situated south of the midchannel of the Gila River.

Second. That portion of unsurveyed township 4 south, range 4 east, which will be embraced in sections 1, 2, 3, 10, 11, and 12 after the said township is surveyed.

Third. Five thousand acres to be allotted to the Indians at the settlement of Gila Crossing.

Fourth. One thousand five hundred acres to be allotted to the Indians located at the Maricopa settlement.

Respectfully submitted.

W. H. CODE,
United States Indian Inspector.

[Charges by S. M. Brosius.]

DEPARTMENT OF THE INTERIOR,
Washington, March 11, 1910.

The honorable the SECRETARY OF THE INTERIOR.

SIR: * * * The writer had nothing whatever to do with the above legislation, but admits having used his best efforts to effect the exchange of some 180,000 acres of desert land belonging to the reservation for an irrigation system to be built with reclamation moneys at an estimated cost of over a half million dollars. * * *

Very respectfully,

W. H. CODE, *Chief Engineer.*

The said "desert land" in T. 1 S., R. 5 E., is selling now for $100 per acre.—Chandler Ranch. (Notation by Herbert Marten.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES INDIAN SERVICE,
Pima Agency, Sacaton, Ariz., July 10, 1911.

Mr. S. M. BROSIUS, *Washington, D. C.*

DEAR MR. BROSIUS: Inclosed I send some excerpts from the agreement between the Water Users' Association of Salt River Valley and the Government. As I understand this agreement it stipulates that the lands of the Pimas to the extent of 10,000 acres shall be assessed at the rate per acre which the lands irrigated in Salt River Valley under the reservoir are assessed, "acre for acre," as the agreement says.

The present cost of water right per acre of these Salt River Valley lands is about $45 per acre, with an additional assessment for conduits, canals, ditches, etc., of nearly $5 per acre.

It appears that by paying this assessment on 10,000 acres ($45 per acre approximately) the Indians are to have 1,000 horsepower of electricity furnished to them indefinitely, at the cost of production instead of at the selling price to those people whose land has not been signed up under the dam.

The cost of production now is about seven-eighths of a cent whereas the selling price of electricity to outsiders is about 1½ cents per kilowatt hour. But the agreement seems indefinite in this particular. You can see the original by inquiring for it at Washington. I do not see any clause which specifies that no charge shall be made for the electric power, other than that of maintenance of plant, etc. after the electricity has been delivered to the reservation line.

The expenses last month (June) were $269.50 for running 6 wells on the reservation one-fourth of the time. If the full 20 wells should be installed and operated all the time continuously, as they would have to be to irrigate the full 20,000 acres proposed, it is apparent that the cost would be over $3,000 per month, or $36,000 per year. Why should the Indians be saddled with this immense burden, when originally they had this amount of water free out of the river, and could get it now if an injunction were granted against the whites above them? Last year I find former Supt. Alexander did get out a temporary injunction, but failed to use it. Even if the San Carlos Reservoir should not be built, the ranches of the whites would not suffer for water, because the whites could do just what the Indians are doing now, or the Government is doing for them, namely, buy electric power and develop water. Why did not Mr. Code recommend that the whites should do this and restore the stolen water to the Pimas, instead of recommending that the whites should keep it and make the Government pay a vast sum to recover a substitute!

All anybody asks is to see common justice done. The Indians are the lawful owners of the river water, or a portion of it. Mr. Code will doubtless disingenuously declare that it could not be ascertained as to how much water the Indians had used in times past and were entitled to. But the court has done this very thing in two instances, namely, in the case of the Salt River Indians and the Maricopa Indians, where conditions were the same as they are here.

It could be ascertained as to how much low-water mark water the Gila River Pimas are entitled to, and this water should be given them. Probably Mr. Code would say there would be no advantage in doing this, because it is costing the whites under the Roosevelt Reservoir more for their gravity water than it is costing for electrically developed water. That is neither here nor there. The point is that these Indians had water that did not cost them one cent, merely a little labor, and it is this same water that the whites are using and do not wish to give up, and will not turn down to the Indians. When the Pimas get fee simple to their lands why should they be compelled to pay twenty or thirty thousand dollars a year to get water that originally they had for nothing and water that the whites get for nothing now, and will continue to get for nothing? These people, just emerging from barbarism, can not stand to pay an enormous amount of money like $20,000 per year.

It would spell utter ruin for them, even though the cost be but $1 per acre. And, again, these pumps—the maintenance cost of pumps and motors is very considerable—some day they will wear out. If a poor engineer gets hold of them, one or two may fly to pieces in 10 seconds. Then it will be up to the Pimas to raise money for more. Without doubt, if this system is allowed to go in, every Pima will make haste to sell his land after he gets fee simple to it, and in place of being prosperous farmers, as they used to be before their water was taken from them, they will be all outcasts and laborers for others, without homes or resources of their own.

Somebody besides Mr. Code should be allowed to look into this situation for the Government, if the Government is in the least interested in its red charges. There is still $122,780 left from the Government appropriation for the Indians to be used for their benefit, and the district attorney's estimate of the cost of a suit against the whites was but $30,000. No injustice would be done these whites, as, in the first place, they stole the water from the Pimas, and, in the second, they can buy electrically developed water the same as the Government is doing for the Indians.

Then there is the Queen Creek reservoir site that was recommended to the Government some years ago by their engineers as being a feasible project for impounding water for the Pimas, but was abandoned in favor of this wretched pumped water. There is also the reservoir site (possible site) suggested by Mr. John Granville in his report to Mr. Code, in the spring of this year near Sacaton siding, 8 miles north of Maricopa station, but probably Mr. Code never said anything about this possible site. I was with Mr. Granville when he made his examination, and he took two photographs of the site, and said that the country would have to be tested and surveyed before the location could be positively recommended as a reservoir site. But it is a proposition that should be examined, because it overlooks a country that was once flourishing and prosperous and from which hundreds of tons of wheat used to be brought to the white settlements by the Indians who raised it, and which country is now a desolate waste, with nothing to mark it as having been a garden but some mounds and old ditch borders. If the Indians can not get gravity water that will require only labor to get it on the ground and no expensive and complicated machinery, they are ruined and might as well be turned loose first as last.

Very respectfully,

HERBERT MARTEN.

Mr. Code should be asked as to the Little Gila proposition. It will do him no good to say the banks might wash and the whole river come through. It was open for hundreds of years before Mr. Code and Alexander shut it up. I don't really know who was the party responsible for shutting up this stream, because Alexander used to accuse Code and Code to accuse Alexander.

Much seepage water might be developed also, which is just as good as pumped water, being practically the same thing. This can be had at a slight expense.

Code seems to have gone fanatical on pumped water, which may do for some of the most progressive and intelligent whites, but will spell ruin, utterly, for Indians.

I may add that the Reclamation Service states (and it is widely known) that 4 acre-feet of water are required for an acre of land per year to irrigate it. It will keep the 20 pumps going night and day full 24 hours continuously to furnish 10,000 acres with 4 acre-feet of water per acre per year. The 4 acre-feet per acre for the other 10,000 acres is supposed to be furnished by flood waters.

MEMORANDUM OF AGREEMENT BETWEEN THE GOVERNMENT AND THE SALT RIVER VALLEY WATER USERS' ASSOCIATION, ETC.

The Government is now engaged, under * * * the national irrigation act, in the erection, construction, acquisition, and furnishing of certain irrigation works in, across, and along Salt River, Ariz., and in the valley known as the Salt River Valley, and generally designated as the Salt River project.

The said Government is desirous of supplying to and for the use by Indians water for the irrigation of 10,000 acres of lands on and along the Gila River * * * and for the part accomplishment of that purpose to use 1,000 horsepower of the electric power generated. * * *

The sum of $300,000 has been appropriated by Congress for expenditure by the Indian Bureau for the purpose of constructing * * * works for the irrigation of the said Indian lands, of which $100,000 is immediately available for payment upon account of the cost of the said Salt River project and the extension of a transmission line therefrom to said south line of said township 2 south, range 5 east, in the event of the use therefor for supplying power as aforesaid to the Indians.

Now, therefore, it is agreed that the Government shall, as a part of the Salt River project, construct and extend the proper transmission line or lines from the reservoir district described as aforesaid * * * to said point on said boundary line of said Indian reservation * * * and shall transmit to that point 1,000 horsepower. * * *

It is understood that from that point the Government will otherwise and by means distinct and separate from the works constituting the Salt River Valley project, and at cost not in any wise chargeable to said project, * * * receive, distribute, and use said power independently of * * * said association.

The Government shall further pay, or cause to be paid on account of the construction of the Roosevelt reservoir, the power * * * canals, powerhouses, * * * machinery * * * lines for the transmission of power, and all other component parts of the Salt River project * * * such further sum in addition to said $100,000, as shall, together with said $100,000 in the aggregate equal that portion of the whole cost of * * * said project as 10,000 bears to the whole number of shares of the capital stock of said association which shall be legally issued, plus 10,000.

In other words, that the lands of the Indians to the extent of 10,000 acres shall bear the same proportion of the cost of said works above specified as is provided in the articles of incorporation of said association and in said contract between the Government and the said association shall be borne by the lands of the shareholders of said association equally, acre for acre.

(The next paragraph specifies that the Government, in addition to the foregoing payment, will have to pay maintenance charges for the up-keep of the electric power plant, transmission lines, powerhouses, repairs, and renewals, etc., as 10,000 bears to the whole number of shares of the association's capital stock, upon the same basis of computation as the lands of the members of the said association.)

Whenever the Indians on said reservation shall become the owners severally in fee simple of their lands, the extent of lands, including said 10,000 acres, shall be by the said association, if so directed by the Secretary of the Interior, annexed to and be deemed a part of the reservoir district. * * *

It is further agreed and understood that the Government may not, and that the association shall not, be obliged to furnish any water * * * to any of the lands of the Indians within said reservation, the sole obligation being that of delivering electric power to the reservation line. * * *

In the report of the Commissioner of Indian Affairs for 1904 is found the following:

> June 10, 1904, Supt. Alexander reported that all data relative to the recovering of water to the Pima Indians by judicial proceedings had been furnished the district attorney, and that in consultation with him the attorney had said that "there are 960 persons using water from the Gila River above the point where the Pima Indians divert the water of the Gila for their lands; that there is no doubt but that the case could be taken up and prosecuted to a favorable ending, but the interests are so varied and the water is diverted by the whites as far as 300 miles above the Indians' point of diversion that should a favorable decree be given by the court it would be impossible for the court to enforce its decree, and that the expense of prosecuting such a suit would cost between twenty and thirty thousand dollars; but that a suit against the users of water under the Florence Canal may be won and the court's decree made binding on the few persons under the Florence Canal, and the expense to the Government would be about $10,000."

This statement is willfully and wickedly misleading. Just what these "few people" have done, or rather what they have been permitted to do by the Government in full view of the disaster which was inevitable, the following, taken from the commissioner's report of 1904, will show:

> In a report dated March 1, 1886, this office invited the attention of the department to a letter from Agent Wheeler, stating that there was a project on foot to take the water from the Gila River, at a point about 12 miles above the town of Florence, by means of an irrigation canal, in such quantities as would practically destroy the farms of the Indians.
>
> March 2, 1886, the subject was referred by the department to the Attorney General to take steps to protect the Indians from the effects of the projected canal.
>
> The investigation * * * made by the Geological Survey * * * established the fact that the construction of the proposed dam would result disastrously to the Indians. The report of the Geological Survey was communicated to the department with the recommendation that the subject be again referred to the Attorney General, with request that the United States attorney be directed to take the necessary steps to enjoin the canal company from any diversion of the waters of the Gila River to the injury of the Indians.

Thereafter follows a record of vacillation, hesitancy, and procrastination as must forever constitute one of the pathetic chapters in the Government's dealings with the Indians.

> November 23, 1894, Inspector Duncan reported that the anticipation of the Geological Survey as to the disastrous effects of the construction of the Florence Canal had been realized, but he failed to make any suggestion for the relief of the Indians, except, etc.
>
> May 11, 1895, this office submitted a report from Agent J. Roe Young that the supply of water allowed to pass by the Florence and other canal companies and owners of irrigating ditches and reservoirs on the upper river was entirely exhausted, except at points where the sunken waters of the river were forced to the surface by a natural dam; that the Indians had therefore failed to raise a crop and were destitute.

It is evident from this data that the "few persons" were able to do a tremendous lot of mischief. If this water which the whites have stolen were now restored to the Pimas it would be a partial solution of the starvation problem which confronts them now.

May 22, 1901, Oren B. Taft, president of the Casa Grande Valley Canal Co. (Florence Canal) proposed the purchase of that canal property by the Government, as follows:

> This canal property * * * is for sale. * * * The position of this canal company is that it has the lawful right, which it has been exercising for more than 10 years, of taking from the Gila River practically all of the water that the river will carry at its average flow. (Low-water-mark flow.)

In this same report of the commissioner, however, it is stated by the district attorney that the canal company had not a lawful right to the low-water-mark flow, and that there was no doubt but a suit could be brought with a favorable result. An attempt was made to belittle the damage done by the "few people" who constitute the Casa Grande Valley Water Users, and the Government was fooled into believing what was not true. Since that time (1904) there have come other settlers in the immediate neighborhood of the Pimas, which settlers have been appropriating more and more of the river water, and the Pimas have been ruined as a consequence. Still, Mr. Code says in a recent report that the Pimas ought not to be protected in the waters of the Gila River (low-water mark) if the San Carlos dam be built, because it would be doing an injustice to the promoters of the project. However, these same promoters say that all the waters impounded will be flood waters and the natural flow of the Gila River will not be interfered with, but allowed to pass down the river to the water users. The said water users should be the Pima Indians, whose water it is, and the whites should be made to buy their water out of the reservoir. The promoters would not suffer. It would make no difference to them who got the water they are obliged to let loose. This is another one of Mr. Code's specious and misleading statements made for the purpose of pulling the wool over the eyes of the Government.

If the San Carlos Dam is to be built, the Government ought to take immediate steps to protect the rights of the Indians to the low-water-mark flow of the Gila River. And if the said reservoir is not constructed, suit should be brought to restrain the appropriators of water above the Pimas from diverting the natural flow of water beyond a certain point. There are reputable white witnesses living who know how much water the Pimas were accustomed to use out of the Gila, and the Indians know themselves. There are evidences on the ground to-day which show to what an extent the Pimas cultivated the ground before the whites robbed them of their water, in the shape of old ditches and ditch borders, and there are old-time traders yet living who can testify to the thousands of tons of grain produced by the Indians from fields that are now wastes.

To restore the stolen water to the Indians would no longer mean ruin to the white settlers above the Pimas. They could do and should do what the Government is doing now—buy electricity and use pumped water, the same as the Government has done. Why does the Government insist on making a present of this natural water to the Florence people and others to the permanent detriment of the Pimas when the Government has been told that the courts will give them the water?

There would merely be a transference of interests. The Government would get the stolen gravity water back for the Indians, who are the rightful owners, and the Florence people and others would have the privilege of pumping water by means of electricity, the same as the Government is electing to do now, and leave the Pimas with a white elephant on their hands sometime in the future.

Let the Government not forget that the Pimas want protection of their interests in the San Carlos Reservoir if it be constructed.

Let them also not forget that gravity water can be had for the Pimas by demanding it back.

PIMA AGENCY,
Sacaton, Ariz., July 19, 1911.

Mr. S. M. BROSIUS,
Washington, D. C.

DEAR MR. BROSIUS: To-day I am in receipt of the report of the investigation of W. H. Code before the Committee on Expenditures in the Interior Department.

There are several points in regard to Mr. Code's replies that I should like to take up, as some of Mr. Code's statements are untrue and others are misleading.

On page 647 of the congressional committee's report, July 8, 1911, Mr. Sloan interrogates Mr. Code in regard to the condition of the Indians of the Gila River after the water supply.

Mr. Code says in his reply:

> The Government installed a pumping plant for irrigating the Sacaton school farm, which gave the Indians plenty of melons and things of that kind, that they did not used to have, during some of the dry periods.

Mr. Code forgets to state in this boost for the pumping plant at Sacaton school farm that the Indians benefited are the school pupils and employees only, and that no other Indians get any "melons and things of that kind" from the farm. Only last week four Papago Indian boys, or young Indians, were sentenced to two weeks' hard labor and confinement in the Sacaton school jail because they stole some watermelons from this same school farm, and they are in jail at this time.

This will show just how much benefit the Indians get from Mr. Code's wonderful pumping plant, which costs more to run than the produce which is obtained from its water supply on the school farm. (Figures as to this presently.)

On the same page (647) Mr. Code says:

> About seven years ago, I think, we installed the first plant, and that was at the Sacaton school farm. I have a photograph showing that plant which I would like to have you see. That is the water supply we developed out of the desert down there, and the success of the plant led to the construction of this large project.

Mr. Code does not show in his description of this successful plant the crust of alkali that the successful water has put on the ground in places where a few years ago there was no alkali to be seen. Williams, the gardener, knows how this has been done and will testify to the truth of the statement, I think, if communicated with. Mr. Code says that the last analysis of the water from the wells at Sacaton showed a total of soluble solids amounting to 100 parts in 100,000. Mr. Code does not state what kind of minerals the soluble solids were. If they were carbonate of sodium (black alkali) and sulphate of sodium (white alkali) and chloride of sodium (common salt), as probably they were, then this amount of 100 parts in 100,000 must be considered a dangerous percentage.

In Bulletin No. 53, published by the United States Department of Agriculture, Bureau of Plant Industry, entitled "The Date Palm," on page 87 is the following statement:

> The surface accumulation of sodium sulphate (white alkali), as suggested by Mr. Seidell, may well have some connection with the composition of the very alkaline waters used for irrigation in which the sulphates predominate, and in which sodium sulphate is present to the extent of 121.5 parts per 100,000.

In the same bulletin, page 99, i the statement:

> Prof. Forbes (University of Tucson) considers it probable that with the prevailing agricultural practice of Arizona the use of irrigating water containing 100 parts of soluble salt per 100,000 is likely in a few years to cause harmful accumulations of alkali. In view of this danger, etc.

Also, page 101:

> In the Salt River Valley sample the alkali is of the so-called black sort. Black alkali (sodium carbonate) is intensely alkaline in reaction, and because of this reaction is highly corrosive to the roots of plants.

Why did not Mr. Code produce his analysis of the Sacaton water and explain it? Mr. Code says that the alkali content of the water is not detrimental in case we have river water to supplement it. But has anybody ever given it a thought that if the San Carlos Reservoir becomes an established fact there will be no flood water in the Gila River? It will of course all be impounded. Mr. Code recommends thoughtfully that 25,000 inches be appropriated for the use of the Pimas—of flood water. But the supply of flood water will be so much diminished that the 25,000 inches allowed to flow down to the Pimas will suffice probably for a mere swift surface irrigation, instead of being allowed to flow over and over the land, washing the deleterious minerals—the alkali—away by prolonged irrigation.

It is this prolonged irrigating that deposits the fertilizing material which the river carries on to the land. In case the San Carlos Reservoir impounds all the flood waters, who is to judge of the amount of water to be liberated and allowed to flow down to the Pimas?

They will impound all they can, and will always contend that there is no flood water. All the flood water the Pimas will get will be the flood water which the little creeks put into the channel of the Gila below the dam site. And since no regular flow will go down to the Pimas, the whites above them will be always stealing their flood water, claiming that the flood has ceased and that the flow of water is just natural water colored by silt. If Mr. Code is anxious to provide the Pimas with flood water out of the San Carlos Dam (as he stated to you once), why is he not anxious to provide them with a regular flow from the reservoir? With a diminished supply of flood water and an increased supply of well water from the pumps, the Pimas will shortly find their land in the condition to which the Sacaton farm land is being quickly reduced—of having a nice coat of alkali deposited over the surface.

Mr. Code says further of the Sacaton farm (p. 648), in answer to Mr. Sloan's question regarding the cost of maintenance and operation of the Sacaton school well:

> It would cost at least $2,500 per year for fuel to operate that plant.

Please note that nothing is said in regard to the maintenance charges and wages of engineers; only that it would not cost less than $2,500 a year for fuel. Mr. Code has made a misstatement of the worst kind. To-day I went down to see the engineer (Mr. McLaughlin) and got accurate figures from him.

At a minimum estimate 130 cords of mesquite wood are required to operate the engines which supply power to the pumps per month, when the hours of operating the plant number but eight per day.

Estimating, however, that about one-fourth of this power is required to operate the domestic plant at Sacaton School, then about 100 cords of wood are required for the irrigation plant alone. The cost of the wood for this purpose at $5 per cord would therefore be $500 per month. Since the school farm gets no flood water, owing to the fact of Mr. Code's having shut up the Little Gila River, which used to supply the farm in flood times, this outlay has to be made during nine months of the year, and probably half the said outlay during the three winter months, or nearly $5,250 per annum. These figures are outside of the wood used by the employees at the school and that used in the kitchens. The cost was also figured up by the experimental farmer here, Mr. Hudson, and found to be not less than $2 per hour for actual pumping expenses of the irrigation plant. This is the very minimum expense, and does not really cover the ground. These figures do not include cost of installation and maintenance. Special Agent Ellis, who was here subsequent to J. B. Alexander's suspension, can tell you something of the huge cost of operating the Sacaton irrigating plant. Mr. Code further says (pp. 647-648): "If (the plant) were operated night and day, I should think anywhere from 800 to 1,000 acres might be cared for."

Mr. Code would "think." Has he been doing similar "thinking" all the time, or part of the time? The actual area of land which is being irrigated at Sacaton School farm by the pumping plant installed there by Mr. Code—irrigated at the present time as the maximum area for an eight-hour run of water—how much would you guess? Just 4 acres. Four acres per day of eight hours. That is 12 acres per day of 24 hours, which means 360 acres in a month. This is what they are actually doing now, and still Mr. Code has the temerity, the "face," to stand up before a committee of Congressmen and say that in his best judgment the Sacaton pumping plant would irrigate from 800 to 1,000 acres of land. I don't ask anybody to take my word for it. You might drop a line to Mr. W. O. Hodgson, farmer at Sacaton, to find out how many acres are actually irrigated. I was in conference with him to-day. Mr. McLaughlin will give you the figures on wood consumed and hours of operation of plant as he gave me to-day.

Now, in this connection, it may be noticed how far away Mr. Code's theories are from the actual recorded facts. You will also notice, in this relation, that the figures Mr. Code gives as to the capacity of the pumping plant at Sacaton are about the same as those he gives for the electrically operated pumps. Indeed, he goes on to say (p. 648): "If it (the Sacaton pumping plant) were connected with our electrical power, as we contemplate connecting it, I should think that that large an area could be irrigated" (from 800 to 1,000 acres). Mr. Code is doing some more "thinking." Why is the department so ready to listen to that kind of thinking, when it is nowhere near right, as facts and figures and recorded testimony prove again and again? His steam pumping plant, which he thinks would irrigate in the neighborhood of 1,000 acres of land, comes down to 360 acres by actual estimate in practice, with an irrigation once a month, which is too infrequent, even at that, and since his figures for the electrically operated pumps and his steam plant are substantially the same, it follows that the 13 wells which he proposes to install will irrigate 13 times 360 in actual practice, or 4,680 acres of land. This is the most conclusive evidence it is possible to get, because it is based on recorded facts, which show up in the most positive and incontrovertible terms how great is the discrepancy between what Mr. Code thinks can be done and what is actually being done. It is only the latter which counts for anything, even if Mr. Code should think for a century, and the conclusion is that Mr. Code must think again. Also, that he has thought wrongly. If not, then he has made a deliberate false statement. Let it not be forgotten that he is still recommending how the Government's money shall be spent, and still making statements that he can not substantiate, because they are in contradiction to recorded facts.

On page 648 Mr. Code speaks of the main flood water canal at San Tan. This is a huge affair, built apparently to carry 25,000 inches of flood water or more. Why do the 800 people at San Tan require such a big canal and so much water? If the 25,000 inches of water are all to be taken through this canal, what will the dozen other villages do for flood water? Reference may be made here to the glowing advertisement I recently sent you of the Chandler Ranch. I can bring a witness to prove that Chandler said in his hearing: "I could get flood water for my ranch out of that ditch." And one of the forks of the said ditch is headed straight for the notorious Chandler ranch. Of course now that the ranch is being sold in small tracts and will come under the Roosevelt Reservoir, it will no longer be necessary to get "water out of this ditch" for Chandler's ranch. Also be it remembered that the "gentlemen" who approached Mr. Russell recently with the "offer" of such a fine piece of land for $100 said to him as an inducement that it would get water from the reservation canal "if it ever went through." This same land is now being offered for sale at $100 per acre. The size of the area offered to Russell was 160 acres. Russell himself regards the whole thing as an attempt at bribery—to keep still. Russell would not do it. The thing they dreamed has evidently transpired, because they found an honest man in Mr. Russell.

Why did Mr. Code shut up the channel of the Little Gila River, which used to supply abundance of water to the Sacaton School farm during several months of the year? Special Agent Ellis wanted to open it. Code claims that the banks are not safe, and he thinks the whole Gila River might come down that channel. Mr. Code continues to "think." There was some other motive for stopping up this valuable stream. Ask the field farmer, Mr. W. O. Hodgson, who has looked into the thing carefully. Ask Mr. Hudson, the experimental farmer. Both characterize the thing as an outrage. Ask Special Agent Ellis. Ask Williams, the gardener here. Ask the Indians what privation the closing up of this stream has meant to them.

The banks are safe enough and have been safe enough since the days of the Aztecs, whose irrigating canal it was. The channel of this canal ought to be opened and the much-needed water taken down to the Indians' farms and to the school farm and save the Government $500 per month whenever there is flood water. Mr. Code has soaked them for a pretty penny all these years to no purpose. Why did Alexander post up a notice at the head of the Little Gila just after Mr. Linnen's arrival, stating that he was going to appropriate 25,000 inches of flood water at that point? Mr. Code stated that he was going to carry 25,000 inches through the San Tan flood-water canal. This makes 50,000 inches, and still none for the villages west of Sacaton, and yet Mr. Code recommends that only 25,000 inches of flood water be reserved the Pimas in case the San Carlos Reservoir goes in. Mr. Code must put on his thinking cap and go into his pondering room for a while to study out some answers to these riddles.

So far he has been something of a riddle master, in theory. But facts are harder than riddles, even Mr. Code's riddles.

Page 650 Mr. Code speaks of the maintenance charges for the operations of the wells or pumps on the Gila Reservation. He says the maintenance cost of the proposition would be about 75 cents to $1 per acre, as he thinks. My figures, submitted to you the other day, which again are based on actual running operations at the present time at the present cost of electricity, show that to irrigate the 20,000 acres necessary for eight months of the year would cost $24,000. For six months of the year it would cost but $18,000. But my estimates were for not less than 640 acres to a well. The well at the school farm at Sacaton, which Mr. Code says will irrigate from 800 to 1,000 acres of land, is sufficient for 360 only. And this we can prove. Indeed it is barely sufficient for this limited area. My last figures showed a maintenance cost of over $1 per acre, and the facts obtained from the school farm show that this estimate would have to be doubled. Mr. Code is wrong again. Apparently he cuts all estimates in half. One half he submits to the Government and the other half he keeps (to) himself.

Again, why does Mr. Code not include the cost of the engineers' wages and the cost of repairs to the pumps and motors? If the slightest thing should go wrong with the machinery a pump is lost in 10 seconds. And the pumps are inspected periodically, each in its turn, and the "turns" are sometimes far between, because the engineer can not be in several different places at one time. If he could there might never come disaster. But Mr. Code can easily cut the engineer in two pieces—or in several different pieces for that matter—if the wells require it. Also the casings in the wells will require renewing some day, and machinery, which runs at a terrific rate driven by the electric current, has not a long life. Why does Mr. Code, who must know all this, remain so discretely quiet about it?

On page 651 Mr. Code speaks of the transmission line on the reservation. Mr. Alexander (J. B. Alexander), who was intimate with

Mr. Code, repeatedly said that the transmission line cost $4,000 per mile. What would Mr. Code think about it? The actual cost of material at the present time is about $1,600 per mile. In this connection, Mr. Code states (p. 652): "I presume a good many thousand dollars have been expended that there is no accounting for." Very illuminating.

On page 653 Mr. Sloan asks the question of Mr. Code:

> Do these Pima Indians on the Salt River Reservation, who had original water rights of some 500 inches, pay anything for their water right to the water users' association?

Mr. Code shuffles our of this very nicely. Mr. Sloan's questions were not such as to quite pin him down. Why did he not explain instead of hedging?

He knows very well, as everybody else knows, that the Government was hoodwinked and hocused into paying about $50 per acre for every acre of the Salt River Reservation that is irrigated by these same 500 inches of water that the Indians were adjudicated by court decision and to which they have an original right, and therefore did not have to pay anything for the right to use them, either to the water users' association or to anybody else.

Mr. Sloan asks (p. 653):

> Do those who owned these (original) water rights have to pay anything to the water users' association on the Salt River?

Mr. Code replies:

> Yes, sir; all of them pay, with the exception of those located under the Tempe Canal. Their owners did not go into the association.

Why did Mr. Code not explain why the Tempe people did not go into the water users' association?

I will tell you why. The Tempe people have, or had prior to the Roosevelt project, the best canal in the Salt River Valley, which always supplied them with a good supply of water. The Roosevelt project could not take this supply of water away from them, and they have it now, as they had it then. Only those went into the Salt River project who had to do so to save their own necks, or those few who were bullied into it by the fear of being persecuted by having their water supply shut off if they refused to go into it. But the Tempe people were firm, and they have the water they had originally and pay nothing to the water users' association for it. The Salt River Indians also have the water that they originally had (500 inches), but the difference is that the Government has been made to pay a princely sum for this water, to which the Indians had every bit as good title as the Tempe people had to theirs. Nobody could have taken the Indians' 500 inches of water away from them any more than he could have taken the water in the Tempe Canal away from the Tempe water users. Why was the Government made to pay for it therefore? And why did not Mr. Code (who must certainly know all about this) not explain it?

Why did he not explain why the Tempe people refused to enter the water users' association and why the Government (for the Indians) did? The conditions were similar in both cases, except that the Tempe people have their money in their pockets, while Uncle Sam has gone down from Jerusalem to Jericho.

Mr. Code, on page 654, "thinks," and has thought a good deal and believed a good deal, and relied upon the statements of his predecessor a good deal, in regard to the San Carlos Dam, but admits he never went to see and knows nothing about it from personal knowledge. Why has he always reported upon it so adversely?

On page 654 Mr. Sloan asks this question of Mr. Code:

> Have you investigated the original water rights of the Pima Indians along the Gila River?

Mr. Code says "No."

Mr. Sloan goes on to ask:

> Do you know, or have you investigated the matter of whether or not there was a sufficient flow of water above, and that if it had not been diverted it could have reached the Pimas in the course of the natural flow of the river?

Mr. Code answers:

> * * * If the country 150 miles above had been shut entirely out of water, it is possible that some of the water there might have reached the reservation, although the channel of the Gila is very wide and sandy, and would have taken up a great deal of water.

Mr. Code is very evidently on the defensive and holding back some of the facts. Why does he not explain that if the flow had not been diverted, but had been allowed to proceed down the river bed from the first—that is, from the flood season—the river bed would never have gone dry, and the stream would have had no dust—dry bed—to soak up? Of course, it would have reached the Pima Reservation. Where else could it have gone? Up in the air? But Mr. Code was probably "thinking."

On page 655, near the top, Mr. Code says:

> The elm trees around the courthouse were dying, and the country was absolutely destitute of water. There were no water rights then for either whites or Indians to contend for.

That is a misstatement. Even if there were no water then, the water might have been running the next day, and a water right and water are not the same thing. There were water rights, and the rights belong to somebody now, and they are asserted very loudly whenever water appears, and do not perish or fade away in the temporary absence of the water.

On the lower portion of page 654 Mr. Code states: "There was absolutely no water up there (head of the Florence Canal) at the time I investigated that matter," and so forth.

Mr. Code fails to state what time of year that was. He knows very well that the month of June is the driest month of the year in Arizona. Was it the month of June when he inspected the head of the Florence Canal? I notice in the commissioner's report for 1904, page 18, the following:

"The superintendent (J. B. Alexander) also reported June 10 that he had visited the head of the Florence Canal and found the Gila River to be as dry there as it was below, there being no water and nothing but sand." So Code and Alexander both found the same thing—no water, and nothing but sand. And a person would be a fool to expect anything else at that time of year. But they fail to state just when the river became dry at the head of the Florence Canal; fail to say for how many weeks the water had been running into the Florence Canal, enabling the Florence people to raise their crops of grain and hay and get the said crops matured, while the Pimas' crops were drying up, before the river finally went dry somewhat previous to June 10. Nobody has said that the Florence people divert all the water in the Gila River; but the contention is made that they divert sufficient of the water in the Gila—all that water, in fact, which belongs to the Pima Indians, after the river has gone so low that there is not sufficient water for both the Florence people and the Pimas. The water that the Florence people divert from the Pimas would mature the Pimas' crops in many instances, and the proof of this is that in many instances it matures the crops of the Florence people, while the Pimas' crops, not being so irrigated, dry up. Why did not Mr. Code state the facts?

If Mr. Code had taken the least trouble to inquire, he would have found that the concensus of legal opinion is that the Pimas have not lost their water rights in the Gila River. Why did he not inquire? In a letter written to me, dated July 13 of this year, Mr. J. G. Forse, assistant United States attorney, writes as follows:

> A party would not forfeit his right to the use of water if he was using the water for a beneficial purpose, nor would he forfeit such right if he was prevented from using it by others, unless, perhaps, where a party slept upon his right—did not assert his right till he would be barred by the statute of limitations.

That the Pimas have not lost their rights to the natural low-water-mark flow of the Gila River has been frequently stated by Chief Justice Kent, of Phoenix, Ariz. (unofficially, I think), and only last year an injunction was granted to Supt. Alexander to restrain the whites above the Pimas from the use of the water in the Gila River. Supt. Alexander never did anything with it. In the commissioner's report for 1904, page 17, it is stated by the district attorney that—"There are 960 persons using water from the Gila River above the point where the Pima Indians divert the water of the Gila for their lands"; that "there is no doubt but the case could be taken up and prosecuted to a favorable ending," etc.

Mr. Code recommends Mr. Sloan to look into this report of the commissioner for 1904, showing that he knows very well that the necessary information is there, and yet Mr. Code knows so very little pertaining to the Indians' water rights. Something very strange about it.

Mr. Code says that a supply of water was available and right at the Pimas' door (p. 655).

Is it not also available and right at the door of the whites? But I notice that none of them are very enthusiastic about getting the said supply, except, perhaps, Chandler—the notorious Chandler—who is selling off his ranch to eastern babes and sucklings. McQueen, who put in a steam pumping plant in the vicinity of Tempe some years ago on his great ranch similar to the pumping plant at Sacaton, abandoned it because it did not pay. All those who are raising crops by electrically developed water are growing some special product, so far as I can learn, such as early cantaloupes, or garden truck, where there is a good market for it, or perhaps a little cotton. Why do not the whites share Mr. Code's private opinion about the desirability of this inexhaustible source of water right at their doors? So near and yet so far. If it isn't a commercial proposition, it isn't worth having. The difference is the difference between coming up and coming down.

On page 657 Mr. Code says:

> They (the Pimas) have an absolute certainty in this system.
>
> Mr. Sloan. In the pumping system?
>
> Mr. Code. Yes, sir; in the pumping system and the gravity canal they have an absolute certainty.

So has the Sacaton School an absolute certainty in Mr. Code's steam pumping plant. It can not be denied that that is an absolute certainty—a certainty of the most demonstrable kind, as the figures already given prove very conclusively. If the Pimas' electric pumps are that kind of a certainty, they might as well abandon their white elephant first as last.

Will the pumps be a success commercially? Not if a well can irrigate only 360 acres, same as Sacaton pumping plant is doing, at the present cost of electricity, engineers, maintenance charges, and installation. The whites are not tumbling over each other to get to it—this absolute certainty—Chandler is selling his absolute certainty right out of hand.

On page 658 Mr. Code says he thought the "trade" of 180,000 acres of land, which the Pimas were to have been made to consent to in return for Code's pumping project, a very fine trade. Well, it was—for Code. I sent you the advertisement of the sale of some of that land the other day. They are holding it at $100 per acre, and a man would have to pay that to get it—the land bordering on the reservation I mean, and adjoining what was to have been the traded land.

Code wanted the Pimas to trade 180,000 acres of their land in return for a pumping project which was to have cost $560,000. The mesquite wood on the part of the reservation he proposed to grab would be worth that much, or would have been at that time. Also, Code suggested, somewhat previous to that time, that that part of the reservation be made a forest preserve until he got ready to jump in and grab it. Code says he is sorry the Indians did not trade. I guess he is. He has a right to be. That $100-an-acre land can never be Code's—poor Code—180,000 acres at only $2.75 an acre, and now it is worth a hundred. What a pity the Pimas could not have seen it to their advantage to make a trade.

In the commissioner's report for the year 1904 the construction of a reservoir at Queen Creek (a waterway in the vicinity of the Gila River Reservation) is recommended at a cost of $221,000. Why was that project turned down? Surely not on account of the expense, considering the figures lately presented. Does Mr. Code know anything about this reservoir site, lying, as he says, "right at the Pimas' doors"? I should like to know why this was turned down, and by whose recommendation. It would be interesting to know, considering the failure of Mr. Code's plan to pump water for the reservation, if this project were feasible.

Also, the Pimas' interest in the waters of the Gila River ought to be protected in case the San Carlos Reservoir be constructed. The site ought not to be given away without a clause inserted in the agreement between the promoters of the reservoir and the Government reserving the Pimas' prior right to water (low-water mark flow) in the Gila. The decision is to be rendered September 1 next.

On page 660 Mr. Code mentions "large areas of land that have been allotted to them (the Papagoes) south of the Gila Reservation."

Why does Mr. Code not state that all that land is grazing land, or all but about a quarter section? I have something to say about that land.

In a letter addressed to the commissioner, written from Fort Peck Indian Reservation post office, Poplar, Mont., by Charles H. Roblin, allotting agent, dated July 13 of this year (land allotments 548[illegible], 1908, and 51500, 1911, W. A. M.—Papago Indians on public domain. Mr. Roblin says:

> If there is any possibility that the office may ever contemplate the building of any irrigation plant for the benefit of these Indians, the lands applied for (by them) in township 5 south, ranges 3 and 4 east, will be of great value to the Indians, and their rights, if possible, should be protected.
>
> I am informally advised that the lieu selection made by the Santa Fe Pacific Railroad Co. was made by the railroad company in furtherance of a colonization scheme in which a number of residents of Phoenix, mostly real-estate men, are interested. These gentlemen have proposed to secure title to about 50 sections of land in this vicinity and to develop the land by the establishment of a pumping plant to supply water for irrigation. * * * The Santa Cruz, a typical southern stream, having a considerable run-off during the flood season, runs through this tract of land. * * *

A reference to the map of the reservation and said lands will show that these are just south of the settlement of Casa Blanca, from which settlement Code proposed to move the Indians, as he practically admitted to you, and to put them over the river on the San Tan side. So this is the explanation of that last mystery. Truly the ways of Code are hard and past finding out. Inclosed is a rough plat of the lands required to be reserved. The office reported favorably on all except those marked with red pencil. These are also badly needed to maintain the watershed for the Pimas, and Mr. Russell, principal in charge, so stated to the department, in a letter sent about two weeks ago. Wish you would see what is being done about it, as if the land grabbers should grab this part of the watershed before the Indians can be located on it, the rest of the land would not be worth much. The Indians are gone off toward the south, but will be back in the fall. The lands indicated in red ought to be saved or reserved for them as the other parts have been until they can be located on them.

That Casa Blanca land would have been immediately grabbed by the railroad as more lieu land, as soon as the Indians had been chased off it by Code. Richest land in Arizona.

Sincerely, yours,

HERBERT MARTEN.

ADDENDA.

On page 469 Mr. Sloan asks the question of Mr. Code:

> If the number of wells should be increased and the water level lowered, is it not likely, then, that there would be more solid parts in the water through the greater depth?

Why does Mr. Code not explain that the water level—that is to say, the permanent water plane of the country at San Tan, where the wells are situated—has been lowered some 6 feet since the wells were first used, and that at this very time they have either to dismantle well No. 1 to drill it deeper or else make a supplementary boring at the side of the well to get more water?

Well No. 3 is also out of order and work must be begun on this well.

If the permanent water plane of the country should go still lower, the result to the wells may be disastrous.

Notice how Mr. Code never gives any information except what is wrung from him. Why did he not tell Mr. Sloan some of these things?

He is acting on the defensive and is afraid the facts should come out. The present trouble with the wells indicates what may be expected later on.

It is also always possible that the mineral content in the well water may increase, whether the water plane rises or lowers, as Mr. Code's own words will show. Formerly, he says, when the Sacaton water was first analyzed, the soluble solids in the water were 68 parts in 100,000. Now the content is 100 parts to the 100,000. This is an increase in the alkali content of very nearly 50 per cent. (Rising water plane in this case.)

This well business is all an experiment, and nobody knows what the result will be. If Mr. Code says or intimates that it is not an experiment and seeks to convey the idea that pumping has passed beyond the experimental stage, he is seeking to mislead people.

SACATON, ARIZ., *August 3, 1911.*

Mr. S. M. BROSIUS,
Agent Indian Rights Association, Washington, D. C.

DEAR MR. BROSIUS: The continuation of Mr. Code's testimony has arrived. There are some points there on which I should like to make reply.

On page 665 the case of the United States *v.* Winters is discussed. Mr. Code contends that he thought that the difference between a reservation made by treaty and a reservation made by Executive order would operate so as to allow the Pimas to be despoiled of their water rights. Still, Mr. Code says that he merely "understood" there was a distinction of some kind, but he does not know what the distinction was.

This is a lame excuse for not having recommended bringing suit against the whites who have stolen the Pimas' water. There are the best possible grounds for the Government bringing such suit at the present time, and the consensus of legal opinion is that the Government would be given a favorable decision. Especially should this be done now, while the prospect of the San Carlos Reservoir being constructed is so favorable and before the reservoir site is given away, in order that the Pimas' interests in that reservoir might be assured definitely and permanently. The Pimas' water rights were not lost 20 or 25 years prior to 1904, as Mr. Code falsely states. There were years prior to 1900 when the Pimas had a shortage of water, due to the encroachments of the whites, and a lower water supply than common in the river, but many years they raised good crops with that part of the natural flow of the river which they diverted. But the white settlers kept encroaching more and more, and conditions kept growing steadily worse, until the water was practically all gone. If the Pimas' water rights in the flood waters of the Gila River are not adjudicated to them soon, it will shortly be contended that they have lost these, too—the last resort that the white man has left to them. But Code is sanguine and says: "Bore wells." Of course, he is not the one to pay for the wells. Uncle Sam does that, or the Indians—without their consent.

On the same page (665) Mr. Sloan inquires of Mr. Code whether, if the Pimas' water had been protected along the course of the Gila River, there would not have been sufficient flow to have furnished the Pimas the necessary water.

Mr. Code replies: "I stated that there was a possibility that some of the water would have reached the Pima Reservation."

Why does Mr. Code misrepresent the matter? That some of the water would go down to the Pimas is not the question.

Whatever water the Pimas are entitled to receive should be received at their point of diversion.

If all the water in the Gila River were diverted at a point 150 or 200 miles above the Pimas, with the sole exception of the volume to which they are entitled, of course all, or the greater part of it, would disappear into the bed of the river before it reached the Pimas. And this is the point, apparently, which Mr. Code is trying to make. Such contention is disingenuous. Mr. Code knows very well that enough water would have to be let down the river bed to supply the Pimas with the volume due to them at their point of diversion, not at some remote point elsewhere.

An illustration of this is the case of the Pimas under the Arizona Canal at Salt River.

A supply of 500 inches of water was adjudicated the Pimas by court decision at their point of diversion.

If any loss of water were sustained in getting the water down to the Indians' point of diversion, it was to be the white man's. Mr. Code says in his first testimony before the committee that if all the water in the Gila River were turned down to the Pimas the greater part would soak into the dry and sandy bed of the river. But, as I pointed out, he must know he is misrepresenting the facts of the case, because if the Pimas' water had not been diverted the water would have been constantly running and the river bed would be perpetually wet and not dry and sandy, and the water, or sufficient of it, would have to reach the Pimas.

Mr. Code admits, under pressure, that "the Indians are entitled, as the first users, to the waters (of the Gila River)." Mr. Code goes on to say: "Rather than enter into litigation, I believe it better to get the water—and we have got the water." Wonderful! He has got the water; yes, it is too true. He has got it, and at what a cost. And what a quality after it has been got. The cost you have—the staggering, amazing cost, and the less said about the quality and its effect on the land the better for the reputation of Mr. Code's wells. (See Addenda.)

It Code's estimate of the cost of producing the water from the electrically-operated wells is as far from the experimental facts as that estimate he gave for the Sacaton school farm, his information is of very little value. (See my former letter for the actual figures.)

Mr. Code submitted a photograph during the course of his testimony before the committee, representing the water flowing out of a well at the Sacaton Indian School farm. "This is the water supply we developed out of the desert," he says grandiloquently.

There was a photograph taken at one time of this same well in operation, which, I think, is the one Code used.

Just beneath the orifice at which the water gushes out, and extending away from it, there is a large rectangular tank of concrete, 10 feet wide. In the photograph this tank has the appearance of a great canal, wide and deep, and the effect is portentious. But a little way below the said long rectangular tank of such imposing dimensions, is a little insignificant ditch which conveys away the water, but of course this is not represented in the photograph. The said photograph, like many another, is designed to deceive, and the effect conveyed by the photograph does not correspond with the facts. It is an artistic lie. Why did Mr. Code not explain, if this was the photograph he used, as I have reason to believe it was?

He has pulled the wool over the eyes of the committee with a skill that in any other cause would really have been commendable. Mr. Code (p. 667) intimates that the Government has made good with the Pimas on the Gila River and has given them water. This is not the case. The Government has not yet made good with the Pimas, and under the system proposed by Mr. Code, facts and figures already given prove that they never can make good. There are now some nine wells bored, each capable of irrigating, as before shown, some 360 acres of land, or 3,240 acres of land in all. And when the white elephant is finally given to the Pimas in fee simple with their allotments, they will have to pay some $24,000 a year for electricity alone, at the present cost of production, to irrigate these few acres.

It is not a commercial proposition, and therefore not a practicable one.

The Government has not made good. Mr. Code has not made good. Nobody, so far, has made good with the Pimas.

On page 670 Mr. Code states that the Pimas did not have an acre of land under permanent cultivation in 1902.

Mr. Code forgets the two heads of seepage water running at Cottonwoods (a village near Sacaton) and another head at Blackwater, and considerable water at Gila Crossing. All the land under these streams is and was in 1902 in permanent cultivation.

Mr. Code's testimony evinces more and more his insincerity and desire to keep back the true facts.

On the same page (670) Mr. Hanna asks: "As a matter of fact * * * you have now furnished these Indians with ample supply (of water) for all they can use?

Mr. Code replies "Yes, sir."

Mr. Code had better look to his veracity. So far there is not one-fourth enough water, and what little they have got is being obtianed at prodigious cost.

On same page Mr. Code goes on to say: "The supply (of water) is there and the Indians must avail themselves of it." How, be it asked, by moving? Is that the way? Why not bring the water to the Indians from the San Carlos Dam instead of bringing the Indians to this expensive pumped water?

When the entire system of 20 wells is completed, less than one-half of the required area of land on a 5-acre allotment basis can be irrigated.

Might a certain premonition of failure, swift and certain when it does come, in Mr. Code's mind have been responsible for the order that recently went out to allot all the heads of families on the reservation at the village of San Tan under the wells 10 acres to a family instead of 5 acres to the individual, as originally proposed?

Here it may be asked again: Why has such a prodigious flood-water canal been built at San Tan if it were really never the intention to move the Indians, as Mr. Code now states it never was? Where are they going to put the water? The canal will hold enough water to drown out the whole Pima population. Also, the said canal is forked into two branches, and one of them (the largest) is headed straight in the direction of the notorious Chandler ranch. The canal is not yet completed.

The Indians want to know how they are going to be allotted. They want to know why they are not conferred with, and what is the reason for all these arbitrary proceedings of Mr. Code, who has undertaken so much, apparently, entirely on his own responsibility, with a view to forcing the Indians into submission. The Indians want to know if they are not now going to get 5 acres apiece, but only 10 acres to a family, and what assurance they have from the Government that 5 acres to the individual with assured water will be given as promised originally. They want to see the water running on their allotments before they accept them, and this is reasonable and right, a perfectly just contention.

Why is Mr. Code, or the Indian Office, or whoever is responsible, in such a frantic hurry to allot the land before anybody knows where water is coming from? The wells bored in future may be too salty for use. Nobody knows how they will turn out. It is all an experiment, and still Code continues to give out these Arabian Nights stories as hard facts. Mr. Code says (p. 671): "This is an expensive project." Code has told the solemn, unvarnished truth. Here is for once a hard fact from Mr. Code, lonely and stark and bald—this is an expensive project It is. Mr. Code has expended already some half million dollars, and has practically nothing to show for it. As usual, the poor Indian is made the scapegoat, and has to take less land on account of the blunders of Government officials.

One well (No. 1) has to be bored deeper on account of the lowering water plane of the country (a grave menace to all the wells). Another one (No. 3) is in need of repairs. By and by one will go to smash, and so it goes—a stream of gold pouring down every one, and a stream of water of dubious quality coming up.

And yet Mr. Code would recommend such a project, when there is the San Carlos reservoir site and the Queen Creek reservoir site, whence good gravity water might be had that would flow down without expense instead of up through a pump.

Better throw the wells away than keep on with them at the present cost—$24,000 a year to operate 20 wells—which will irrigate effectually only some seven or eight thousand acres of land.

Consider that in four years this means nearly $100,000, and only half enough land irrigated. It means $3 an acre for water every year; nay, more, the maintenance charges and wages of engineers have not been figured, the short life of the machinery, etc. And the whites—even the whites—are groaning now under the assessment charge of $5 an acre on the Salt River Valley land, and some of them are being ruined, because they can not make their land pay this large additional charge. Why does Mr. Code not state these facts?

Mr. Code says (p. 671), "That if 5 acres were allotted to an individual, some families would receive a much larger area than they could successfully farm."

Let Mr. Code come with me. I know Indians who are farming from 20 to 60 acres, or more, and raising crops on all of it, and not only on this Gila Reservation, but I can refer you to white people living on the Salt River Reservation, to show that the Pimas are doing the same thing there. These Pima Indians are farmers, not nomads, and deserve to have a fair show. No family of any size could begin to make a living on 10 acres. The white people here know that.

Now, notice. Code says the children would be allotted later when the system was extended. This is speculative and uncertain. Mr. Code's statement would mean that the parents' land and the children's land would be separated—and separated in some instances by a roaring river in flood, without a bridge. What kind of contemplated system is this of Mr. Code's? Does he propose, among other schemes, to give every family a flying machine so as to cross back and forth to their widely separated farms every day and proceed in safety and assurance over the flood? It is difficult to see how the lands can be practically farmed otherwise.

Mr. Sloan next tries to find out from Mr. Code (p. 671) if the Indians have ever been consulted or conferred with in regard to the matter themselves.

Mr. Code throws the responsibility onto Mr. Carl Gunderson, formerly chief alloting agent. But I have talked at length with Mr. Gunderson with reference to the subject, and know that Mr. Gunderson never contemplated removing the Indians, and the Indians so understood him.

All this later development of removal was done in a quiet and surreptitious manner, and the Indians knew nothing about it until very lately, when they immediately began to petition against their removal.

Mr. Carl Gunderson contemplated allotting every individual of the tribe 5 acres with assured water, 5 acres with possible water, and 40 acres of grazing land, so as to include the entire reservation.

Page 672, Mr. Code says: "An Indian hates to leave his country, even to cross the river to farm land."

Why not? Who would want to farm raw, tough land that bakes when it dries after irrigation into hard blocks at San Tan, where Code's wells are situated? Who would want to leave the best soil on earth, such as the Casa Blanca people have now—good alluvial loam—when water can be got to it so readily by bringing the transmission line across the river at slight expense? Why not have utilized the large area of said alluvial land near Casa Blanca on the south side of the river in the first place rather than at San Tan on the north side of the river, where the enormous flood-water ditch has been constructed, heading straight for the notorious Chandler ranch of very many thousand acres, illegally secured from the Government by Code's friends and business associates?

Doubtless the whites wanted it. This is obviously the logical conclusion. The Chandler ranch is nearly opposite Casa Blanca on the other side of the Gila River, and the new railway running through the Chandler ranch to the new town of Chandler. A Phoenix newspaper (Gazette) stated recently that it was contemplated to bring this railway across the river and connect it with the Southern Pacific Railway at Casa Grande or Maricopa. To do this would mean running through or close to the Indian settlement of Casa Blanca, where all the good land is. Now, it is not hard to see why the Indians were to be removed from Casa Blanca, nor to understand why all or nearly all the wells were to have been sunk at San Tan on the other side of the river. Why does Code think the Casa Blanca people fatuous or stubborn for refusing to move? Fatuous they certainly would be if they should consent to move. Their land will be extremely valuable if that new railroad, now so close, ever comes through it. And the committee has nobody to tell them these facts, but are obliged to take Code's smooth and plausible word for it.

Mr. Sloan goes on to ask Mr. Code again (p. 672) if the Indians would be willing to move, and if they have been consulted with in regard to the matter. Code says "yes."

But I know, and the Indians know, that they have never been consulted with in regard to any proposed removal. It seems that it was never Mr. Code's intention that they should be consulted. The whole thing has every appearance of a deep-laid plan hatched out in the dark, which was to have been "pulled off" at the proper psychological moment without consulting any of the parties most immediately interested, and so quickly that resistance would have been out of the question.

The Pimas want to be consulted. Have petitioned that this be done. Why are not they consulted?

Code says "It is necessary to put a canal on the north side" (San Tan side). Why was it necessary to put such a very great canal on the north side and so many wells for only 800 people?

There is too much that is shuffling and evasive about Mr. Code's testimony. It has a spurious ring to it, to anybody in the least acquainted with the situation.

Mr. Code goes on to say (p. 672) that if the Pimas on the Gila Reservation are not willing to accept his plans for them—the white elephant he proposes to give them—there are many Indians who would be glad to come and accept them. On the next page he says further: "If the Pimas or the Maricopas object to locating along the canals * * * there are other Indians who will not so object." But what good would that do the Pimas and Maricopas? Code refers to another tribe altogether, the Papagoes, a nation of nomads, that are to the Indian tribes here what the gypsies are to the whites. The Papagoes have virtually nothing, and, of course, anybody would accept something for nothing at all, even if it were a white elephant, perhaps, because he could turn it loose again whenever he grew tired of it. But that is not making good with the Pimas, as Code said the Government had done. That is the point. But few Papagoes claim any right on the Gila Reservation, but the Pimas used to have productive farms there before their water was stolen by the whites, and it is to them that restitution should be made. But Mr. Code found himself in a tight place and threw the burden onto the Papagoes. His statements had a piscatorial odor, however, and the committee must have been cognizant of it.

It would seem that somebody's interests must be in grave jeopardy when a witness so persistently holds back the facts. Code says that they never intended to abandon the plan of irrigating land in the vicinity of Casa Blanca.

Why, then, put 10 wells on the other side (north, or San Tan side) for 800 people and contemplate an additional 3, when only some 20, all told, were planned for the entire tribe of 4,000 people, especially when there is twice as much vacant alluvial land at Casa Blanca, good land, which was at one time farmed when there was water for it, as there is at San Tan? Why force the Indians across the river to the wells if no removal was contemplated, and if wells were really to have been put down at Casa Blanca? But the land at Casa Blanca, if supplied with water, is among the best on earth, and the whites would like to have it, while the vacant raw land at San Tan will hardly raise a crop of wheat even until it has been planted several years to alfalfa. Notice that the idea of putting additional wells at San Tan is said to have been conceived within the last month or so. It is also within the last month or so that the railway has been built to Chandler Ranch, opposite to Casa Blanca, and heading straight for the rich Indian lands there. Naturally they did not want to allot Indians there. But somebody is to blame for all this. Who are the guilty parties?

The said Chandler land is now selling for $100 an acre. Some of the rich Indian lands contiguous to it are embraced in the area that Mr. Code proposed at one time to open to settlement.

What would have been the result of so doing? Does anybody really believe that there would have been many bona fide homestead entries made there? Chandler, Mr. Code's friend and business associate, could have planted a lot of conscienceless whites on the ground, as he did once before, when he obtained his ranch of some 20,000 acres or more—obtained it illegally from the Government—and after the said whites had proved up on their homesteads they could have turned over to Chandler a certain portion of the land (in certain known three-fourths) and kept the rest for their trouble. As payment for so doing Chandler furnished them water, etc., until the time came to turn over the land to him.

Mr. Sloan asks (p. 674): "And the river is impassable a large part of the year—particularly during the season when they are planting?" Mr. Code replies: "During the winter season, when they are irrigating from the flood waters; yes, sir."

The inference here is, of course, that the river is not impassable in the summertime and that the Pimas irrigate principally from flood waters in the wintertime. Also the covert suggestion is that it would not make so very much difference whether the river were in flood and impassable in the wintertime or not, since the Indians are not planting anything in the wintertime. But why does not Mr. Code answer the question? Is the river impassable, particularly during the season when they are planting? This is the question.

Mr. Code is shifty and evasive again. The river is not often impassable in the winter months. It is in the summer months, when the rains come, that the river is in flood and impassable; in the summer months, chiefly, when they are planting crops of corn, beans, and melons. The river was a roaring, raging flood only last week, so that nothing could cross it but a bird. This is its common condition in summer, when rains may be frequent, and it may stay in flood two or three weeks at a time.

But perhaps the children, allotted on the one side of the river, could manage in some way to get along without their parents, allotted on the other side, for two or three weeks at a time.

On page 675 Mr. Code intimates that the Indians at Gila Crossing have sufficient water. But the Gila Crossing Indians have not sufficient water, and this Mr. Code must know. Their summer crops are often very poor because of the shortage of water.

Besides I would call to your attention in support of this contention the fact that Mr. Code himself recommended that a steam pumping plant be installed at Gila Crossing of 500 horsepower. This was in the year 1902, I believe, or about that time, and a copy of Mr. Code's letter recommending that project can be had. I have read the same, but have not it by me at the moment. How does Mr. Code reconcile his position then and his present position?

If the water furnished the Indians were stored water, the settlement of Gila Crossing could be furnished with as much as it needs.

Mr. Code states on same page (675) that he does not know whether the Gila Crossing people are getting as much water now as they were getting prior to the appropriation of their water by the white people above at Solomonville and Florence. What kind of a dunce is he? Considering he is so good at inferences and riddles, it is a wonder he could not infer this. But probably he did not want to infer it. Mr. Sloan brought the horse to water, but he could not make him drink.

Anybody knows that before the water was diverted at Solomonviell and elsewhere the Pimas had the natural flow of the river, all they wanted to use, and that this flow extended as far as Gila Crossing and away beyond this point.

On page 675 Mr. Hanna asks: "Is it the fault of the Indians that they are not irrigating (more land)?" Mr. Code says unblushingly, "It is the fault of the Indians."

Oh, oh. Is this the truth as Code sees it?

The poor Indians were using all the water they could get when the dry weather came, and the crops required it.

Mr. Code does not tell the committee that there were scarcely any ditches constructed to carry the water from the wells to the Indians' canal until quite recently, when they started the work again. How could the water be carried to the Indians' farms without ditches to carry it in? And as no surveys had been made for the said ditches, Mr. Code had better explain how it was the fault of the Indians that they were not using the water.

It is the fault of the Indians, is it? No. 1 well went nearly dry this spring and some crops under it were lost as a consequence. Something got the matter with No. 3 so that the water flow was further reduced as a consequence. Three or four of the wells were inactive, and the Indians were clamoring for more water than they could get and were using all they could get.

These are facts which can be substantiated. Moreover, when the land had not as yet been allotted, how could Code expect the Indians to put large areas into crops and run the risk of being moved off after the allotments were made?

On page 689 the question of the Indians entering the water users' association is taken up. The Indians' land at Salt River was signed up under the reservoir to the extent of 2,800 acres when the cost per acre was estimated at only some $15.

The Government for the Indians will now have to pay more than three times this amount, according to Mr. Code's estimate of $45 an acre, which is too low, because the cost is still climbing; and yet, in spite of this additional cost, the Indians on the Salt River Reservation are getting less than their pro rata of water.

Statement.—The white people on the south side of Salt River under the Tempe Canal refused to enter the water users' association, and it costs them about 50 cents per acre per year to get their water. The Indians living on Salt River Reservation on the north side of the Salt River had 500 inches of water adjudicated to them by court decision before the Government signed up for them with the water users' association.

Now, although the Government signed up for 2,800 acres at Salt River, under the reservoir, at approximately $50 per acre (the present cost), they received but 200 inches more of water. This is at a cost of over $200 an acre for the additional land that the Salt River Indians have a right to irrigate under the Roosevelt project.

The Indians were not consulted in the matter at all, as they never have been, and the fact is that one department has soaked it to another department of the Government, and the water users' association, of which Mr. Code says he is a member, has been the gainer by it.

Mr. Code denies that his private interests are inimical to the interests of the Indians.

Mr. Code is vice president of the Mesa City Bank, of which Chandler, of the notorious Chandler ranch, is the president. Chandler's lands have been fraudulently obtained from the Government by bogus homestead entries. That is to say, that the people who homesteaded on the land later obtained by Chandler were not bona fide settlers.

Mr. Code was running a canal through that land in years past as engineer, which he ought to have known had been obtained by fraud, as the facts were common knowledge.

Later, when Mr. Code became an official in the Indian Department of the Government, he recommended that a large area of good land on the Indian reservation at the end of this canal, which watered the Chandler property—the said area of land being adjacent to the said property—be taken away from the Indians and thrown open to settlement by the whites.

Mr. Code attempted to justify his recommendation on the ground that said area of land was too rough to be irrigated, but really it seems to have been a sop to the white man to get Congress to vote the large appropriation for what Mr. Code calls his "expensive project" (p. 671).

It is known to many persons that the said area of land was frequently flooded by this same Chandler Canal which Code put in as engineer for his friends and business associates.

This looks like a parallel case with a certain higher Government official who has lately been compelled to resign his office on account of public disapprobation, he having improperly used his influence to secure valuable lands away from the Government for private interests.

Eighteen thousand acres of the Chandler Ranch are now advertised as being for sale. The price as advertised is $100 per acre.

Here is a total of nearly $2,000,000, of which a great part at least has been illegally filched away from the Government and properly belongs to the Government now. No good title can be given to the purchasers of such land, and the Government should see to it that the public is not defrauded as well as itself.

On page 695 Mr. Sloan asks Mr. Code point blank whether his private business interests are in any way adverse to the Indians' rights that Code is called on to administer. Mr. Code says "no." He couldn't very well say "yes" and hold his job.

But the foregoing has shown decisively that Code's interests are unquestionably adverse and inimical to the rights of the Indians.

If the railroad, of which the terminus is now at the Chandler ranch, should cross the river to Casa Blanca, Mr. Code's interests will likewise be very adverse to the interests of the Indians, because Chandler and Code are president and vice president, respectively, of the same bank.

Mr. Code says (p. 690) that the Roosevelt Reservoir water could be conveyed across to the Gila River Valley. Why, in heaven's name, then, was it not done? They claim that this land under the pumps is eventually to be taken in under the Roosevelt project. There is a statement to this effect in the agreement entered into between the water users' association and the United States. Why, in view of the facts, was not stored water bought for the Gila River Reservation instead of electricity? Such water could have been taken right through the Consolidated Canal (old Chandler Canal) now owned by the Government, and there would have been no ditches to make. Mr. Code will say there was not enough water; but evidently there was enough, in his opinion, to justify, as he says, signing up an additional 2,000 acres at Salt River at the same figure as the Government is now paying for the right to use electricity on the Gila Reservation, where his pumps are. (See addenda.)

Mr. Code says (p. 698) that the pumped water is a better water as regards keeping fields free from weeds. Perhaps this is its one redeeming virtue. But how is it that those few people who pump water to irrigate their land always take river water whenever they can get it? This question surely demands an answer. Will Mr. Code have the temerity to deny that they do take river water? If so, the only answer of an inhabitant of southern Arizona will be a smile.

Mr. Hanna asks (p. 698) if there is a less amount of salt in the wells as time goes on. I will say right here, and Mr. Code will not deny it, that the well at Sacaton Indian School has increased in salt content nearly 50 per cent since it was installed, and there is no reason why it should not go on increasing. There is the point—nobody knows. It is all a matter of experiment.

Chandler is putting up a huge power plant and sinking wells on his illegally obtained ranch. No wonder Code wanted the Government to install pumps. Of course, if the Government is making a success of the experiment it must be all right. The value of the adjacent property will immediately improve, and the Mesa Bank, of which Chandler is president and Code vice president, will reap considerable of the accruing benefit. Code intimates that he was elected vice president of the Mesa City Bank (p. 696) because he had some influence with the people. Doubtless. Nobody has any reason for questioning the veracity of that statement. But had Code no influence with the Government? Was his influence so meager and were his recommendations of so little avail that he could not make a very good cat's-paw to drag the chestnuts out of the fire for his friend Chandler and the Mesa City Bank?

On page 699 it is stated by Mr. Willis T. Lee, geologist, in his report (art. 9) that—

> Pumping plants used in irrigation near Gila Valley prove that water can be pumped rapidly enough, and at a cost low enough, to make pumping a practicable method of securing water for irrigation.

But the proof of the pudding is the eating.

Mr. Lee may have investigated the geological side of the question, but evidently did not investigate its business side. He fails to state that plant after plant has ceased to work at pumping water for the land, because after exhaustive trials the method could not be made to pay. He was speaking of things in an experimental stage—things which have not been subject to the test of time—and he jumped to his conclusions; he did not verify them. The rusty engines of the abandoned McQueen pumping plant are still sitting in McQueen's fields near Tempe—a failure.

The Hansen pumping plant near the Chandler ranch was a failure. The Reeves great pumping plant at Buckeye, on the Lower Gila Valley, was a failure. Another pumping plant near Phoenix, just off the Buckeye Road, has been abandoned because of the expense, and others could be mentioned which remain as melancholy testimonies of the wretched ineffectiveness of pumps for irrigation purposes.

The only effective system of irrigation is a downward, or gravity, system, which is supplied with nature's pure rain water. Any system that contemplates raising water from great depths and saturating the land with its alkaline flow is foredoomed to failure.

On page 699 Mr. Code says that during the last five or six years there has been a great improvement in the additional farmers supplied by the Indian Office over those supplied by the civil service. Of late years the Indian Office has insisted that a man should have a knowledge of irrigation, says Mr. Code.

Does Mr. Code know anything about the additional farmer at Maricopa, lately on the Gila River Reservation?

I can bring a witness to prove that this farmer remarked on conveying water to the said witness's field, "This is the first dam I ever put in." A wonderful knowledge of irrigation he must have had—on paper. This farmer has lately been "allowed" to resign because of his ineffectiveness.

The additional farmer lately sent to Salt River made no secret of the fact that he knew nothing whatever about irrigation. He was free to say, "I know nothing whatever about this work."

What kind of evidence is this that Mr. Code is giving out so glibly under oath?

On page 702 the different classes of water rights are discussed. The water can not be separated from the land, according to the court decree, and the land with the water is termed, respectively, class A, B, or C land, as the case may be, and the meaning of the symbols is explained.

Mr. Code says, in reference to the McDowell Indians:

> With the adjudication of 700 inches (of water) for the Salt River Reservation, they would be very, very sure of their water supply.

But the said water supply is far from adequate now. There is not more than half enough water for Salt River. Besides, water rights go with the land and can not be separated from it, and the only way the McDowells would be sure of having their water rights transferred effectually would be for the court to make a ruling to that effect, and thus reverse itself as to its previous decision.

As the allotments are now being made at Salt River, Indians are being allotted some on class A land and others on class B land. This is a very dangerous thing to do and will, surely as the world moves, result in future trouble.

As long as the Government retains control of the Indians' water, all may be well. But even so, there is no assurance to that effect. If an Indian has an allotment on class C land and the Indian Service should undertake to run water on the said class C land at a time of low water when there was not sufficient for class A land, a man having his allotment all in class A land could bring an injunction against the man using water on class C land and compel him to turn the water down onto the former's class A land.

The Indians may never discover this, and probably would not wish to profit themselves by it even if they should discover it now. But if a white man should get hold of an Indian's allotment—which is probable under the right to sell a deceased Indian's land—and should water become scarce, then the white man would not be a white man if he did not immediately bring suit to restrain all the Indians from using water on class C land. The danger lies in the fact that the allotments made to many of the Indians are all on class C land and some are all on class B and A land, respectively.

Moreover, leaving aside the future, if at the present time the whites down below the Indians should ever find out at a season of low water, when there should not be enough even for the whites having class A land, that the Indians were irrigating a thousand or two acres of C land when there was not stored water for the said C land, there is no telling what would happen. The white man would simply say to the Indian, "You use your water on class A land, or else you turn it down for my class A land"; and the court would have to sustain the white man under the law of prior right.

As the case stands at present everything depends on the generosity of the court to "wink" at what is certainly contrary to law—the fact that at the present time there is enough water, and the future ignorance of the white man as to the exact status of the situation. There are plenty of shyster lawyers, however, in this country who will not fail to enlighten the white man when the time comes.

If the possibility suggested above should become a fact, it would necessitate the many Indians who have been allotted on class C land giving up their farms on account of having no water. This is just what has happened before in dry seasons to white people in the Salt River Valley.

They are putting in cultivation every acre of land that the reservoir will care for now, and in case of a prolonged dry spell, such as this country is accustomed to passing through, many people will be without water.

The Indian Service may rotate the water on A, B, and C land as long as nobody makes any objection, but the fact that that is contrary to law is a most serious menace, and though the supply of water is now above normal, it will not always remain so; and the present chief justice, who obligingly consents to "wink" at the arbitrary arrangement of the Indian Service, which is contrary to his ruling, can not be altogether depended on not to die or resign his office. Some day the whites are going to get hold of some of this Indian land by purchase, and then there will be trouble.

If they are going to play this sort of hocus-pocus with the Indians' water rights, some provision should be made by law to protect the Indian, and the sooner the better.

It would be interesting to know (since nobody apparently so far has met with any explanation) why the Salt River Indians on the north side of Salt River are not getting their water on the same basis as the other water users in the Salt River Valley.

The Indians are entitled to only 700 inches of water (500 inches of which they originally owned), and yet their land has been signed up under the reservoir to the extent of 2,800 acres, when the whites are allowed three-tenths of an inch of water to the acre. Thus the Indians should be getting 840 inches of water instead of 700 inches, if the Government gets it at the same ratio as the white man. Seeing that the Indian Department is paying at the same ratio for the Indians as the white man pays, what is the reason for the difference? Why does the Indian pay the same price as the white man and take less water?

Perhaps this may explain why the Indian Service is allowed to divert water from A land to B and C land, as per Mr. Code's testimony, and rotate the flow in any manner they desire, which is contrary to law. It is laying up a great harvest of trouble for the future which there will be no way to avoid or regulate.

As proof that the foregoing contention is true, see pages 720 and 721. Mr. Sloan asks "if the Indian officials have the right to disregard the decree they would be violating the principles upon which the water rests?" Mr. Code replies: "That is true."

Mr. Code further says: "When the appropriations are made we endeavor to call them all prior right No. 1." This is all very well, but it will not do. Mr. Code and the Indian Service may call all the land class A land, or prior right No. 1, as he terms it, but that does not make it so. It is simply procrastinating and putting off the inevitable evil day for some future time.

Let the Government give attention to these facts while they may, or else hold their peace for all time.

It will be too late to apply the "favorite prescription" of undoing the wrong after it is done.

The matter should be adjusted by law now.

The poor, ignorant Indian knows nothing about the trap he is sailing into, and the Government officials, who ought to know, seem not to care.

Somebody ought to wake them up and get the matter settled while there is yet time.

I have shown that there is a big discrepancy against the Indians, figuring that they are allowed 700 inches of water. However, it is my opinion that when the land was signed up under the reservoir the Indians were to get only 500 inches in place of 700. In this case the discrepancy would have been immensely greater.

The Government seems to have been held up for a pretty penny, and the Indians are getting less water than they are entitled to have, and somebody is responsible for this. Who is it?

The attached petition is virtually a summary of the foregoing.

Very truly, yours,

HERBERT MARTEN.

ADDENDA.

Page 2. The following to be inserted after the words in italics, page 2: "the better for the reputation of Mr. Code's wells."

All the peach trees at Sacaton Agency died suddenly for some reason, and all about the same time. A Government expert examined them for root disease, but found none.

The only reasonable explanation is that the alkline pumped water killed them.

Page 9. The following to be inserted after words in italics: "on the Gila Reservation, where his pumps are."

The Maricopa Indians in the Gila River Valley are using Salt River water, which has been adjudicated to them sufficient to irrigate 1,000 acres of land.

JANUARY 31, 1912.

Hon. JOHN H. STEPHENS,
Chairman Committee on Indian Affairs
of the House of Representatives, Washington, D. C.

DEAR SIR: We understand that in the consideration by your committee of the feasibility of constructing a reservoir for impounding the waters of the Gila River in Arizona and New Mexico, the contention is made that the well-and-pump system is the best method of irrigating the Pima lands.

It is submitted that the expense of more than a million dollars estimated to be necessary for the completion of that project would seem to be a very unwise expenditure of public funds in view of the fact that at best the area susceptible of irrigation under that system will be small, permitting per capita allotments of probably less than 5 acres, whereas the Indians are insisting on allotments of not less than 10 acres, the latter acreage being recommended by the Commissioner of Indian Affairs.

It is further urged that, according to reports submitted by Government engineers, a yearly depreciation of 10 per cent of the initial cost of installation must be allowed on the plant. In the report of Engineer W. T. Lee, published as Water Supply Paper No. 136 of the United States Geological Survey, an annual depreciation of 10 per cent on the machinery used for pumping is estimated throughout the computations given in that report.

William H. Rosecrans, recently employed by the Interior Department in the capacity of consulting engineer, in a report submitted during the fall of 1911 to the Commissioner of Indian Affairs relative to securing a water supply for the Pima Indian lands, states as follows:

> It is true that flood-water canals and pumping plants are being installed to irrigate these lands, but I consider those in the nature of temporary improvements, which, if they serve to irrigate these lands for the next 10 years, will be well worth their cost,

and that they should certainly be abandoned if storage water becomes available, since that will materially reduce the cost of the water to the Indians.

The University of Arizona, in Bulletin No. 49, "Cost of Pumping for Irrigation," on pages 459 and 460, has this to say:

> The life of the average pumping plant, in use every year, will probably not much exceed 10 years. This would indicate that at least 20 per cent of the first cost of the plant should be included each year as a part of the expense of running the plant, in order to cover these items of interest and depreciation.

The flood-water canals, while relatively permanent in their nature, can hardly, under present conditions, be considered better than temporary improvements. If the Government should fail to construct a reservoir at San Carlos, certain financial institutions are eager to finance the necessary bond issues for the construction of a reservoir at that point as a private project. It is scarcely conceivable that the Government should antagonize a plan of reclamation shown by its own engineers to be feasible, even though constructed by private capital, in case it should refuse to construct the reservoir itself. The result of such impounding of the Gila River floods would be that the Indians' flood-water canals would be dry throughout the year and therefore valueless. That this prospect is imminent is shown by the following letter addressed by the Consolidated National Bank of Tucson, Ariz., to H. Marten, dated September 12, 1911:

> Replying to your letter of recent date in regard to the financing of the Casa Grande irrigation project, I beg to advise that when a committee of those interested in this project were recently in Tucson, they were advised that if the Interior Department ruled favorably to them in the San Carlos reservoir site, the necessary financing could be assured. None of the local banks would be interested directly, but would arrange under the conditions named above for the financing through eastern connections.
>
> CHARLES E. WALKER, *Cashier.*

This danger, therefore, menaces the Indians and the Government: That these wards of the Government are likely to be made altogether dependent on a system of irrigation by means of pumps whose life may be less than 10 years, or else the Government, in order to make necessary provision for the Indians, will be forced to buy impounded water from a private company at what may be an exorbitant price.

It is shown by the reports of Government engineers that a reservoir could be constructed at San Carlos which would irrigate not less than 60,000 acres of land, sufficient to give every Indian on the Gila River Reservation a 10-acre allotment of irrigated land and leave water to spare for 20,000 acres more. The cost of this dam with all auxiliaries, including damages to the San Carlos Indian Agency buildings, which would be submerged or have to be moved to another location; the moving of 5 miles of railway; and the cost of a new irrigation system above the Indian Agency for these Apache Indians whose agricultural lands to the extent of 587 acres would be flooded, by the backing up of the water, it is estimated after exhaustive investigations, would amount to $1,038,926. (See Water-Supply Paper No. 33, page 77.) On page 75 of that report is the following with respect to the Apache Indian lands:

> In order to provide for the damage which would be done to these Indian farms, the estimate includes $20,000 for the construction of a new irrigation system for the Indians above the reservoir site. There is as much water available from the Gila River at points between San Carlos and Geronimo as near the agency. Lands in

> that locality are unoccupied, are of equal fertility, could be irrigated with equal ease, and are on the reservation. If, therefore, a substantial irrigation system should be built for these Indians higher up on the river, and this should be given to them in lieu of their primitive and deficient systems that now exist, it is considered that the treatment would be fair.
>
> Estimates show that it will be equally expensive to install the well and pump project on the Pima Reservation as to construct the proposed dam at San Carlos while the former has the disadvantage of being able to irrigate, when completed, less than half the acreage required for allotment to the Indians, and at an annual cost per acre greatly in excess over water obtained from a reservoir.

The Government's own engineers have shown the construction of a reservoir at San Carlos to be not only a feasible undertaking, but that the excellence of the site is unsurpassed for foundation purposes. Among those making such favorable reports are James D. Schuyler, J. B. Lippincott, John H. Quinten, and F. H. Newell, Director of the Reclamation Service. Mr. Newell says:

"The foundations at San Carlos are as good as can be found anywhere." (See Hearings before subcommittee of the Committee on Indian Affairs, United States Senate, Indian appropriation bill, year ending June 30, 1902.) The quality of the building material is shown to be excellent. Admittedly feasible plans have also been suggested for the disposal of the silt which would be deposited in the reservoir.

The advantage accruing to the land from the use of river water over pumped water must not be underestimated, not only because of its relative purity as regards alkalinity, but because of the alluvial deposits and wealth of natural fertilizer brought down by the floods and deposited on the land. In Bulletin No. 44 issued by the Agricultural Experiment Station of the University of Tucson, Ariz., pages 189–191, is the following:

> FERTILIZING VALUE OF GILA SILTS.
>
> Potash, phosphoric acid, and nitrogen are all contained in notable amount in these sediments * * *. Nitrogen supplies the chief need of our irrigated soils for a fertilizer, phosphoric acid also being valuable. The nitrogen alone ranges from 3.58 to 173.70 pounds in 1 acre-foot of water. At 15½ cents a pound this runs from 55 cents to $26.92 in value at Eastern rates, of much-needed fertilizing material. Considering that from 2 to 5 feet of water may be used each year, the unfailing fertility of lands irrigated with such waters may be understood.

On page 63 of the same publication it is stated:

> For the year (August, 1899, to August, 1900), reckoned at Eastern valuations, the potash, phosphoric acid, and nitrogen taken out by canals from Salt River was worth $1,733,000 * * *.

The superior value of muddy water indeed is so clearly recognized in some parts of the world that it is commercially rated accordingly.

> In the valley of the Durance, France, the turbid waters of that stream bring a price for irrigation which is ten and twelve times greater than that paid for the clear, cold waters of the Sergues River.

The relative amounts of alluvial sediments and fertilizing material contained in the Salt and Gila Rivers are greatly in favor of the latter.

A further great danger under the well system lies in the fact of the alkalinity of the pumped water at Santan where the pumping project is being installed on the reservation. Analyses of this water secured by the Government's engineers show the alkaline content to be already dangerously high. (See Hearings No. 1, Committee on Indian Affairs, H. Res. 330, last four pages.) Pumped water containing a smaller percentage of dissolved salts than these analyses show has already lessened the productiveness of the Sacaton Indian School farm and has ruined parts of the garden in the short space of four years.

A further menace is the formation of the malignant and much-dreaded black alkali in the soil of that garden. How this has taken place may be readily understood from the following:

> The second change in composition wrought under our conditions of irrigation (Arizona) is through the reaction of the common salt of the irrigating water with the calcium and magnesium carbonates of the soil, particularly in the presence of carbon dioxide.
>
> Carbon dioxide in the soil, resulting in large part from the decay of organic matter, aids this reaction by converting calcium corbonate into the more soluble and reactive bicarbonate (a dangerous alkali). * * * The sodium bicarbonate formed in the latter case, though comparatively mild in its effects, may, under conditions not accurately ascertained, change into the malignant normal carbonate, so that its formation is to be regarded with apprehension. (P. 178, Bull. 44, above referred to.)

Whatever contentions may be urged for or against the use of pumped water in irrigation, the result of actual experience in irrigating the Sacaton Indian School farm and garden with such water is a matter of record and would seem to render further argument superfluous. Since the wells were installed there some six or seven years ago, the alkaline content of the water has increased nearly 50 per cent, as shown by official records. (See Hearings No. 16, Committee on Expenditures in the Interior Department, House Rept. No. 103, p. 649). The Sacaton School garden, moreover, has also been supplied with great quantities of manure to compensate for the lack of the muddy river water.

As a question of initial cost the reservoir system is the more desirable. Already some $400,000 have been expended on the well system and by contract it is sought to bind the Government for not less than $400,000 additional to be paid to the Salt River Valley Water Users' Association. A reservoir could be constructed whose waters would irrigate effectually and at less expense several times as much land as the pumps can possibly irrigate, and under a reservoir system the land would be maintained in a condition of perpetual productivity.

It would seem folly to make great expenditures of money for an irrigation system whose period of usefulness is limited to 10 years. The statement made by the Government's engineer heretofore referred to that the wells and pumps already installed on the Pima Reservation will be well worth their cost if they last 10 years is certainly open to question. That they are in the nature of temporary improvements is beyond doubt, and the Government is surely in justice obligated to make permanent provision for the industrious Indians whom it has allowed to be deprived of their irrigating water by reason of the neglect or indifference of its own officials. This must be done before it makes citizens of the Indians and abandons them to their own resources.

The wells are fully shown to be in the nature of a makeshift, good chiefly as an auxiliary arrangement in times of prolonged drought.

The San Carlos Reservoir has been highly recommended by eminent engineers in the service of the Government. Isolated reports are on file wherein engineers, at first by findings of fact, strongly supported the San Carlos project, but who later reversed their original recommendations and became enthusiastic for the construction of the Salt River project, which seems to have largely benefited the arid holdings of wealthy real-estate owners in the Salt River Valley. In the words of the eminent engineer, James D. Schuyler, in reporting upon the feasibility of the San Carlos Reservoir project, under date of September 28, 1910, these are "illogical and biased reports * * * which would seem to advocate the throwing away of vast undeveloped wealth. The prodigal waste of natural resources implied in the proposition to abandon this reservoir site is so contrary to the conservation policy which is the present watchword of the Nation that it should not be entertained for a moment. The San Carlos dam site is the best on the Gila River, one of the largest and most important streams of the West, and is the only dam site with a capacious reservoir basin and extensive watershed area tributary to and above it."

Very respectfully,

S. M. Brosius,
Agent Indian Rights Association.
Herbert Marten.

Report of James Dix Schuyler on Water Storage for Irrigation on Gila River, Ariz.

[Contained in Annual Report on Hydrography of the United States Geological Survey for 1899-1900, No. 21, part 4.]

(The report from which the following excerpts are taken was printed as Senate Document No. 152, Fifty-sixth Congress, first session. Also as Senate Document No. 27, Fifty-fourth Congress, second session.

Mr. Schuyler is one of the greatest authorities on dams and reservoirs in the United States and was selected to accompany President Taft to Panama in order to pass on the feasibility of the Panama Canal. He was employed by the Government as consulting engineer during the investigation of the San Carlos and other reservoir sites on the Gila River.)

The purpose of the engineering investigation authorized by act of Congress approved July 1, 1898, was to ascertain the feasibility and cost of impounding sufficient water to irrigate the lands of the Gila River Indians.

STORAGE UPON GILA RIVER.

From all previous measurements and available data for the years 1889, 1895, 1896, 1897, 1898, and 1899, Mr. Lippincott concludes that the minimum flow past the Buttes during that period was 353,639 acre-feet per annum, the maximum flow 616,206 acre-feet, and the mean flow 469,093 acre-feet per annum.

Having to deal with a river of so large a volume, the question at once arises whether it is feasible, desirable, or proper to construct a dam and reservoir in the immediate channel of the Gila of so small capacity as 40,000 acre-feet, through which all the water of the stream must necessarily pass, when the maximum flow of the river is more than fifteen times the suggested reservoir capacity. That the reply to this question should be negative admits of no doubt or discussion.

It may be accepted as an axiom applicable to almost every reservoir site that the nearer its capacity reaches the maximum annual run-off of the stream upon which it is located, unless it is in a basin at one side and fed by a conduit, the longer will be its period of usefulness This is true because all streams carry more or less sediment in suspension, the total volume of which bears a certain relation to the total volume of the flow. On some streams this proportion of silt is very large, and in others it is so small as to be negligible in reservoir calculations. When a sediment-bearing stream passes through a lake or quiet body of water, as a reservoir, its load of silt is mostly precipitated, and the basin in time becomes filled. If the reservoir receives barely sufficient water to fill it once a year, it will last very much longer as a useful storage than if it receives several times as much water as would be required to fill it, with its proportionate amount of sediment. The silt problem is one of prime importance in nearly all reservoirs, but it is particularly serious on streams so heavily laden as the Gila. It would be folly to construct a reservoir of but 40,000 acre-feet capacity across Gila River unless provision were made to increase the height of the dam every two or three years. This would be injudicious and costly and would be bad engineering. For these considerations it has been deemed wise to estimate, in the case of each of the three reservoirs discussed in the following pages, the maximum height of dam which could be safely built or which would form a storage that could reasonably be expected to fill from the stream in driest years. The reason for this decision is manifest. The permanence of the work is a prime consideration, while at the same time the opportunity offers for reclaiming a very large section of the arid public domain with the water that may be stored in addition to the requirements of the Indians. From a financial point of view it is obviously proper to make this enterprise, which is necessitated by simple justice to the Indians, of such magnitude as to reimburse the cost and to be of general utility and advantage.

SAN CARLOS DAM SITE.

The exploration of Gila River above the Buttes, made by Mr. Cyrus C. Babb, hydrographer, in the spring of 1899, resulted in the discovery of a dam and reservoir site below the junction of the San Carlos River with the Gila, which subsequent surveys have proved to surpass all other sites on the watershed of the river, not only for capacity of reservoir but for cheapness and feasibility of construction of the dam. The site had not before been known to exist and its discovery is a notable achievment. It is in every way preferable to the Buttes—better in the matter of foundations, materials of construction, capacity of reservoir, and cost of construction. The San Carlos is as superior to the Riverside site as the latter is superior to the Buttes site. Comparing the dam sites at Riverside and San Carlos, the latter is, in general terms, one-third to one-fourth the width of the former, requiring about half the amount of masonry, with about the same maximum depth to bed rock, so far as ascertained, and with a quality of rock for foundations, abutments, and construction purposes of higher specific gravity, greater density, and superior resistance to erosion.

The reservoir basin also is of greater capacity, with a slightly lower dam. The site for the dam is one which is eminently suited to the erection of a masonry structure of the highest type. No other kind of dam has been considered for this site, as it fulfills all requisites of stability in a more satifactory manner than any other type that could be built and can be made as enduring as time. The form and dimensions of dam best suited to the peculiar conditions there existing have been given careful study by all the engineers engaged upon the work, and as presented in the drawings accompanying Mr. Lippincott's report, it is believed to be well designed and to be located in the most advantageous position available.

The estimated cost of the dam, including damages to the buildings of the Indian agency and military post, the construction of a new system of irrigation for the Apache Indians higher up the river, and the removal and reconstruction of the railroad that now passes through the basin, is $1,015,927. This figure is a very liberal one. It includes $150,000 for the excavation of foundations, which is at the rate of nearly $5 per cubic yard for the material that would have to be taken out if a tight cofferdam were sunk to bedrock at the upper and lower toe of the dam. The estimate of $6 per cubic yard for the concrete masonry may appear low for a locality so remote that railroad freights from the seaboard bring the cost of Portland cement to about $8 per barrel. (This latter figure is used for safety, on the basis of present quotations for freights, although when actual construction begins it is confidently believed that special rates may be made on large quantities that will be materially lower.) The method proposed of regrinding cement with silica sand in equal parts and producing a product known as "sand cement," as recommended by Mr. E. Duryee, C. E., in his report (Water-Supply and Irrigation Paper, U. S. Geol. Survey, No. 33, pp. 82–90) offers the possibility of so material a reduction in the amount of cement necessary as to justify the figure used in the estimate, $6 per cubic yard for first-class concrete masonry. The writer is personally familiar with the product called "sand cement," has investigated its manufacture and tests, and fully indorses its use in the dam in the manner proposed. * * * Sand cement is coming into very general use in Russia, France, Australia, and South Africa, and in this country there are several plants in operation, one of which, located in Brooklyn, N. Y., manufactures 500 barrels a day. At the suggestion of the writer this cement was used in lining the canal of the new hydraulic laboratory at Cornell University, where it was particularly essential that there should be no leakage. * * *

When construction details are planned it may be considered desirable to modify the arrangement of outlets shown on the preliminary plans to provide for the utilization of the very considerable power which manifestly will be available and which should be made a source of revenue.

SILT PROBLEM.

The determination of the probable volume of silt carried in suspension by the waters of the Gila reveals the fact that the river carries on an average about 2 per cent of solid matter. This great load of sediment is exceeded by few rivers in the world. * * *

It would seem essential in planning any reservoir on the Gila, to prepare for the ultimate construction of the highest dam which it is practicable to build at the site. * * * At San Carlos a dam 200 feet above the stream bed is entirely practical and would furnish a storage capacity of approximately 550,000 acre-feet. At the estimated rate of deposit this dam would require 63 years to fill.

The raising of the dam to its ultimate height offers the cheapest practicable disposal of the silt during the period of its life of utility, and to this end all future plans should be made.

The land should be segregated below the extreme elevation to which the water might require to be raised by increasing the dam to its ultimate height, and permanent improvements upon it should not be made. Finally, when in time this remedy becomes exhausted and the capacity of the reservoir area actually needed is being encroached upon, a by-pass channel could be constructed and the silt be sluiced out by that means and by hydraulic dredging. The latter could be done at a cost of 2 to 4 cents per cubic yard. This would put an annual tax of $2.50 to $5 per acre upon the land irrigated, which might by that time be borne with equanimity. The power available from the dam should have a commercial value sufficient to bear this burden. It is now salable at the rate of $100 per horsepower per annum. Five thousand horsepower net delivered electrically to the neighboring mining regions should command a price sufficient to pay for the dredging required annually. These suggestions are not of immediate value or application. The problem is one which future generations must meet and solve. The way is indicated for the solution of this problem when the time comes. The most urgent need for the present is to reserve all of the sites on the river for future utilization to the limit of their practical capacity.

GILA RIVER AS AN IRRIGATION CONDUIT.

The possible losses by evaporation and infiltration in the 60 miles of river channel below San Carlos have not been overlooked in this investigation, and the canyon below San Carlos and the Buttes was carefully examined at low water. It was found that the flow of the stream was practically undiminished all the way down, and that while the loss from evaporation was considerable it was about balanced by the underflow or seepage coming in from the tributary drainage area between these points. The subject is intelligently discussed in Mr. Lippincott's report, and the conclusion is reached that for all practical purposes there are no disadvantages in storing the water at San Carlos, 60 miles above the Buttes, and no greater loss of water to be expected than if the reservoir were located at the latter place. Also that the flood discharge of the stream below San Carlos will be available for diversion below the Buttes during a portion of the year, and when such diversion is made the storage at San Carlos need not be drawn upon, which will increase the duty of the San Carlos reservoir. These conclusions are fully concurred in by the writer as sound and well based.

CONCLUSIONS AND RECOMMENDATIONS.

Summarizing the net results of the investigation, the conclusions to be drawn are as follows:

First. That a minimum of 40,000 acre-feet of water annually should be stored for the supply of the Indian reservation.

Second. That it is not feasible to obtain this supply from Queen Creek, although the dam and reservoir proposed on the stream are feasible if a sufficient water supply were available.

Third. That Gila River is the only available source of permanent supply.

Fourth. That it is not feasible or advisable to build a dam and reservoir on the Gila for storing so small a quantity as 40,000 acre-feet, on account of the rapidity with which a small reservoir will fill with silt.

Fifth. That it is not feasible to construct a reservoir outside of the channel of the Gila of sufficient capacity to provide for the needs of the Indians, filling the same annually by a conduit from the river.

Sixth. That it is not advisable to build a dam and reservoir on the channel of the river of less capacity than half the total annual flow of the river in minimum years.

Seventh. That feasible reservoir and dam sites exist on the Gila at the Buttes, at Riverside, and at San Carlos.

Eighth. That it is not feasible to build a masonry dam at the Buttes on account of the rotten quality of the rock, the great depth to bedrock, and the excessive height of dam required to obtain a storage of 174,000 acre-feet, or about half the minimum flow of the stream.

Ninth. That a combination rock-fill and masonry dam is feasible at the Buttes at a cost of $2,643,327, storing 170,000 acre-feet, but that it is not feasible to construct a dam of any type of greater height or capacity.

Tenth. That the Buttes Reservoir of the stated capacity may be expected to fill with solid matter in 18 years, unless dredged or sluiced out.

Eleventh. That it is feasible to construct a masonry dam at Riverside at a cost of $1,989,605, including damages for right of way and diversion dam at the head of the Florence Canal, forming a reservoir with a capacity of 221,134 acre-feet.

Twelfth. That it is feasible to increase the height of the Riverside Dam at least 70 feet above the one estimated upon, which would give an ultimate reservoir capacity of about 650,000 acre-feet, and would not fill with solid matter in less than 67 years.

Thirteenth. That it is feasible to construct a masonry dam at San Carlos at least 70 feet higher than the one contemplated in the estimates, forming a reservoir with an ultimate capacity of approximately 550,000 acre-feet and a probable life of usefulness of 63 years.

Fifteenth. That provisions should be made in the working plans for the ultimate extensions suggested, and that public lands in the reservoir basin should be reserved for the additional area that may ultimately be flooded.

Sixteenth. That the San Carlos Dam should be built as the first step to be taken for the storage of water upon the Gila, and that all other available sites should be permanently withdrawn from entry with a view to their ultimate utilization for storage purposes.

Seventeenth. That the working plans of the San Carlos Dam should be drawn to permit of the complete utilization of all power which may be developed from the head of the water issuing from the reservoir, and that steps should be taken to realize on the full commercial value of the power.

Eighteenth. That that portion of the public domain which can be irrigated and reclaimed from the surplus storage of Gila River Reservoirs, over and above what is required for the Gila River Indian Reservation, should be withdrawn from entry, segregated into an irrigation district, provided with a system of canals of distribution, and only offered for sale at a rate commensurate to their true value as irrigable lands with water rights, the proceeds to be placed in a fund to be used only for continuing the improvement, extension, and care of reservoirs and storage dams on Gila River.

LOS ANGELES, CAL., *September 28, 1910.*

CHARLES R. SLIGH, Esq.,
Grand Rapids, Mich.

MY DEAR MR. SLIGH: I have already sent you a report signed jointly with Mr. Henry Hawgood, M. Inst. C. E., replying to the principal criticisms made by Chief Hydrographer Leighton, of the United States Geological Survey, on the project of the San Carlos Reservoir, and take the liberty of adding a few further comments on the subject. I feel very deeply the injustice which may be done in perpetuity to the present population and future inhabitants of the Gila River Valley by the possible success of the effort to forever prevent the erection of the dam at the site below the San Carlos Indian Reservation for the conversion of that great valley into a storage reservoir. The Gila River is too large and important a stream and commands too vast an area of fertile lands to admit of the possibility of its being condemned to remain forever undeveloped to satisfy the greed of a railway corporation. The flood waters of this mighty river have vast potentiality and they must be controlled and put to the service of man in irrigation.

There are several other large reservoir sites on the Gila above Florence where this can be done, but unfortunately the only one of the various sites which is provided with a feasible dam site is the one at San Carlos. It is indeed a pity that the site at the Buttes above Florence did not prove to be a feasible one by reason of the unreliable character of the foundation of the dam. This site would have given the lowest possible location for impounding all of the run-off of the mountain portion of the watershed above the irrigable valley land.

Every mile that a storage dam retreats upstream above this point reduces in large measure the watershed area and volume of run-off available therefrom for storage. The San Carlos site has very much less run-off tributary to it than the site at Riverside below the mouth of the San Pedro River, which is the second best reservoir location to that at the Buttes. The San Carlos site misses all of the very valuable run-off of the San Pedro River and many minor streams. Indeed it is located as far upstream as it is possible to go with an impounding reservoir intended for the conservation of the flood run-off that should be utilized. It is greatly to be regretted that so much of the watershed of the Gila lies below this point, but if the suggestion made by Mr. Leighton were to be carried out and the San Carlos site abandoned for others still higher up the stream upon the smaller tributaries, the volume of water which could be impounded by such works would be so diminished as virtually to emasculate the project and throw away a very large and important portion of the potential wealth of the river which should be utilized. The San Carlos dam site is possibly a trifle inferior to the Roosevelt dam site in the matter of the maximum depth of excavation required in the center of the gorge to reach the lowest bedrock, but this is in part at least compensated for by the somewhat diminished width between the canyon walls and is not by any means an insuperable objection. I have carefully examined the rock at both of these sites, and my impression as an engineer was that the San Carlos site is of the two the preferable one in many respects. I have never considered it in any way inferior to the Roosevelt site on the Salt River and believe it to be an entirely feasible site for the location and construction of a high and safe masonry dam.

In relation to the suggestion made in our report as to the development of water from the subterranean supply underlying the valley lands of the Gila which are to be irrigated from this source, it is well to bear in mind that the construction of the San Carlos Dam affords the same opportunity for development of power as that afforded by the Roosevelt Dam and developed by the United States Reclamation Service. This power is transmitted to the valley below and distributed quite broadly over the valley and utilized for general industrial purposes as well as for pumping water for irrigation. The same thing could certainly be done with the San Carlos Dam and the power transmitted to the valley in the same manner. This is an asset which has not been mentioned in our report, but which should not be overlooked, as it may be the means of overcoming in great measure the effects of successive drought and of carrying the project over dry seasons successfully and profitably. Without such a dam this power would forever go to waste and is an asset which would forever be lost to the people of Arizona.

Taking the value of the water and the water power together, I estimate the cash value of this project to the people of Arizona at anywhere from $10,000,000 to $15,000,000. If private parties are ready to furnish the capital for the development and utilization of these great assets the United States Government should do everything in its power to encourage the making of something of such great value out of what is now going to waste, rather than to discourage such investigations by illogical and biased reports like that of Mr. Leighton, which would seem to advocate the throwing away of vast undeveloped wealth.

It is certainly far better for the country that this wealth should be developed and extensive traffic created for the railroads than to permit any railroad to ruin the reservoir site which would make possible the development of a tract capable of supporting a large population and create vast future wealth. The railways could well afford to waive any trifling increase in cost which would result from a higher location, but which alleged increase may be entirely fanciful and assumed, rather than that this water should continue to go to waste and the desert continue to be undeveloped and uninhabitable.

The prodigal waste of natural resources implied in the proposition to abandon this reservoir site is so contrary to the conservation policy which is the present watchword of the Nation that it should not be entertained for a moment.

The San Carlos dam site is the best on the Gila River, one of the largest and most important streams of the West, and is the only dam site with a capacious reservoir basin and extensive watershed area tributary to and above it.

It is feasible and practicable to take care of the silt and maintain the serviceability of the reservoir, and thus remove the objection that has been urged on that score.

It is feasible and practicable at moderate cost to generate sufficient power at the dam to transmit to the lands and there use to actuate pumps of a sufficient extent to yield a powerful and important auxiliary to the water supply during periods of shortage.

Reference has been made by Mr. Leighton to other "more feasible" reservoir sites on the Francisco River and another tributary of the Gila many miles above San Carlos. He does not supply the information, which should have been at his command for the asking, as to the capacity of these reservoirs and the area of the watershed tributary to them, but it is very certain that this data, if presented correctly, must show such inferior reservoir capacity and small available run-off as to be practically valueless in comparison with the possibilities available at San Carlos site.

Very sincerely, yours,

James D. Schuyler,
Consulting Hydraulic Engineer.

Department of the Interior,
United States Geological Survey,
Division of Hydrography,
Washington, December 1, 1899.

Sir: I have the honor to transmit herewith a manuscript prepared by Mr. J. B. Lippincott, giving the results of surveys of reservoirs on Gila River, Ariz., and to recommend that it be printed in the series of Water-Supply and Irrigation Papers.

The investigations upon which this report is based were originally intrusted to Mr. Arthur P. Davis, as he was familiar with the conditions through a preliminary survey. Before the field work was completed, however, his services were required by the Nicaragua Canal Commission, to extend the studies of the water supply of Central America. The responsible oversight was then intrusted to Mr. J. B. Lippincott, who up to that time had been assisting Mr. Davis. This report has been written by Mr. Lippincott, and his conclusions have been verified by Mr. James D. Schuyler.

* * * In addition to the investigation authorized by the act of July 1, 1898, related work was carried on at the same time under the annual appropriation for measuring the streams and determining the water supply, thus furnishing general information which has been embodied in the following pages. * * *

Very respectfully,

F. H. Newell,
Hydrographer in Charge.

Hon. Charles D. Walcott,
Director United States Geological Survey.

STORAGE OF WATER ON GILA RIVER, ARIZ.

(By JOSEPH BARLOW LIPPINCOTT.)

EXISTING CONDITIONS.

Location of reservation (pp. 9–12).—The Gila River Indian Reservation consists of a tract of 357,120 acres lying on both sides of Gila River, in southern Arizona. It extends from a point about 9 miles west of Florence to the mouth of Salt River, the principal tributary of the Gila, and is approximately 12 miles south of Phoenix, the capital of the Territory.

The greater portion of this reservation consists of land whose general slopes are well adapted to irrigation. * * *

The lands of this reservation are arid, the annual rainfall being between 7 and 9 inches, a large portion of the precipitation occurring during the winter or nongrowing months. The growth of all crops in this district is wholly dependent upon irrigation, but with water they can be raised in continuous rotation, while successful dry farming is an impossibility. What is true of the Indian reservation also applies to the adjacent lands of the Gila River Valley. Wheat, barley, corn, and alfalfa grow luxuriantly when watered. The deciduous fruits flourish.

DESCRIPTION OF TRIBES.

The Gila River Indian Reservation is occupied chiefly by the Pima and Maricopa Indians and a limited number of Papagos. The first knowledge we have of these Indians is obtained from a narrative of Cabeza de Vaca, a Spanish explorer, who visited this region about the year 1535, after an adventurous journey overland from Florida.

This traveler describes them very much as they are to-day. They occupied the same lands as at present, and have evidently long been industrious and successful farmers and irrigators, as they continued to be for many years after the acquisition of Arizona by the United States. Their average wheat crop was about 2,000,000 pounds a year, besides which corn, pumpkins, beans, sorghum, and vegetables were raised in large quantities. They manufactured ollas, or earthen jars, and baskets and wove very fine blankets and cotton fabrics. They lived in small villages and held their lands in severalty. The Pimas have always been friends of the whites and enemies of the Apaches. They gave succor and assistance to the early white settlers, and their doors were always open to peaceable whites or Indians when hard pressed by the savage foe. It is their boast that their hands were never stained by the white man's blood. It was under such conditions that they were joined, about a century ago, by the Maricopas, who came as fugitives from the more powerful Yuma Tribe. When the belligerent Apaches gave trouble to the settlers, the United States troops sometimes obtained substantial aid and comfort from the Pimas in the way of subsistence.

The agriculture of the Pima Indians was carried on entirely by irrigation with water diverted from Gila River. These tribes have always supported themselves, and their progress toward civilization has been regarded as one of the encouraging features of the Indian problem.

During the last 10 years, their irrigating water having been taken away from them, they have lapsed into indolence and want.

DECREASE OF WATER SUPPLY.

Their condition of prosperity, industry, and independence continued until, by the settlement of the Gila Valley above the reservation, the water supply was partly cut off and began to be deficient for the cultivated lands on the reservation. No very serious shortage occurred, however, until after the construction of the Florence Canal and its diversion dam, heading about 15 miles above the eastern limit of the reservation on Gila River. When this canal was projected, early in the year 1886, Agent Wheeler called the attention of the Department of the Interior to the fact that if the construction of this canal were permitted, it "would practically destroy the farms of the Pima and Maricopa Indians living on the river," and that the effect would be to render the Indians helpless and destitute, the water being absolutely necessary to their existence. On March 2, 1886, the subject was referred by the department to the Attorney General, who directed the United States district attorney for Arizona to take the necessary steps to protect the Indians from the effects of the projected canal. The matter was delayed until July of the same year, when the Director of the Geological Survey was instructed by the Secretary of the Interior to investigate and report to the department the effect which the proposed canal would be likely to have upon the water supply for the Indian reservation. As a result of the investigation the following facts were established:

1. That the water supply of the Pima and Maricopa Reservations under present conditions is no more than sufficient for the wants of the Indians.
2. That the construction of a dam by the Florence Canal Co. of the character represented in the correspondence will give the control substantially of all the water of the Gila River; and if the owners of the dam carry the water right also they can deliver the water to the reservation or not, as best suits their plans.
3. That the lands outside the reservation which could be economically supplied with water by such a canal greatly exceed in area the amount that the river is capable of supplying, and that the company, with the water rights established, would own the water, with a demand far exceeding the supply, and the Government would have to approach them as a competitor in the market to obtain a supply for the Indians of the reservation.
4. That if the water supply from the river be shut off, the Indian reservation would become uninhabitable.
5. If the dam and canal should be constructed, the present and immediate prospective needs of the reservation might be supplied therefrom, and there would be some surplus water to be used for irrigating lands outside the reservations.
6. That if the agriculture of the Indians residing on the reservation is to have normal growth, and it be the intention to settle other Indians of the neighborhood who are not supplied with agricultural lands on the reservation, the greater part and perhaps the whole of the waters of the Gila will be necessary therefor.

As a result of this report the Department of Justice was again requested to take such steps as would be necessary to prevent the diversion of waters of Gila River to the injury of the Indians of the Pima and Maricopa Reservations. Some offers of compromise were made by the canal company and legal steps were held in abeyance until the canal was constructed, and no successful attempt was ever made to prevent the diversion of the river by the Florence Canal or to compel such diverters to supply the Indians with water for irrigation, and the matter was finally allowed to drop by the Department of Justice.

The result of the diversion was to deprive the Indians of the greater portion of their water supply during the period when the water was most needed to mature their crops. The shortage has been greater some years than others, depending to a certain extent upon the season, whether abnormally dry or otherwise, but in general there has been a progressive decrease of the water supply for the reservation, due originally in great measure to the diversion by the Florence Canal.

Recent events have, however, altered the aspect of the question, from the fact that the supply for the Florence Canal itself is now short, owing to the diversion for irrigation far above that point, chiefly in Graham and Cochise Counties, Ariz. The solution of the problem has become more difficult by reason of its postponement and the condition of the Indians more deplorable. Year after year they plowed and sowed and irrigated their crops only to have them destroyed by drought before maturity by lack of sufficient irrigation water in the drier months. Naturally they have become discouraged by these fruitless efforts, and great demoralization has resulted. A few who are favorably located at points where water appears in the dry bed of the Gila can still mature their crops; a few others are able to eke out an existence by hauling wood, or other precarious employments, while the larger number have become more or less dependent upon charity.

INVESTIGATION IN 1896.

(Page 13.) In November, 1895, the Secretary of the Interior instructed the Director of the Geological Survey to detail a civil engineer to make the examination recommended, and Mr. Arthur P. Davis, hydrographer, was accordingly assigned to this task, in which he was assisted by Mr. Cyrus C. Babb, assistant hydrographer, and Mr. J. B. Lippincott, resident hydrographer for California. Six months of time and $3,500 were expended in the field on the preliminary investigation, and a report was submitted in 1896 (S. Doc. No. 27, 54th Cong., 2d sess.) entitled "The Report on Irrigation Investigation for the benefit of the Pima and other Indians on the Gila River Indian Reservation, Ariz."

It was proposed to construct a dam of masonry to the height of 170 feet above the bed of the river, at which height natural facilities occur for the discharge of surplus waters through adequate spillways.

INVESTIGATION IN 1899.

(Page 14.) For the purpose of continuing the investigation along the lines recommended by Mr. Davis a paragraph was inserted in the act making appropriation for current and contingent expenses in the Indian Department, approved July 1, 1898, as follows:

> For ascertaining the depth of the bed rock at a place on Gila River in Gila County, Ariz., known as the Buttes, and particularly described in the Senate Document No. 27, Fifty-fourth Congress, second session, and for ascertaining the feasibility and estimating in detail the cost of construction of a dam across the river at that point for

the purpose of irrigating the Sacaton Reservation, and for ascertaining the average daily flow of water in the river at that point, $20,000, or as much thereof as may be necessary, * * *

In order to carry out the provisions of this act stream measurements were begun on Gila River at the Buttes. * * *

Twenty-five holes were put down to bed rock at the Buttes with a diamond core drilling apparatus. * * * The depths reached were unexpectedly great. * * * Because of this great depth an effort was made to find another location for a dam. * * * At the San Carlos site three holes were put down to determine the depth to bed rock. This was the last dam and reservoir site discovered.

(Page 16.) Mr. J. H. Quinton was engaged to assist in the designing of the dams and other engineering works. He visited all the localities in question and made a careful field examination.

Mr. James D. Schuyler was employed for purposes of consultation in the planning of the work, in an advisory capacity, and for this purpose made detailed examinations of the various dam sites on two occasions during the progress of the field investigation. The service which Mr. Schuyler has rendered in this capacity has been of prime importance to the work, owing to his very extended experience in the construction of dams for irrigation purposes.

RELATIVE FLOW AT SAN CARLOS AND THE BUTTES.

(Page 22.) In the twelfth annual report of the survey, part 2, page 305, is given a tabulation of the observations made on San Pedro River at its mouth, at Dudleyville, Ariz.,from May to August inclusive, 1890. During this period there was discharged from that stream 19,488 acre-feet of water. This shows that 9.4 per cent of the total discharge of the basin above the Buttes came from the San Pedro, and that 90.6 per cent came from other portions of the stream. * * *

From the above figures it is considered fair to estimate that 90 per cent of the water of Gila River comes from above San Carlos and that a reservoir located at the last-named point would only lose 10 per cent of the total amount flowing by the Buttes. Moreover, the amount which enters the stream below San Carlos would not necessarily be entirely lost to a reservoir at that point, as the discharge from the reservoir could be regulated, at least in part, so as to take advantage of the amount of water available from the San Pedro.

(Page 29.) The following tables of annual discharge of Gila River at the Buttes and at San Carlos have been compiled:

Estimated annual discharge of Gila River at the Buttes and San Carlos, Ariz.

	Buttes.	San Carlos.[1]
	Acre-feet.	*Acre-feet.*
Seasonal year 1889-90, Sept. 1 to Aug. 31	366,561	329,905
Fractional year 1895, Aug. 1 to Dec. 31	354,429	318,986
Year 1896	616,206	554,585
Fractional year 1897, Jan. 1 to Oct. 3	503,585	453,227
Year 1898, approximate	363,902	327,512
Fractional year 1899, Jan. 1 to Sept. 30	203,910	183,519

[1] 90 per cent of volume at the Buttes.

(Page 30.) Using the data obtained * * * to determine the probable conditions which would exist at San Carlos and at the Buttes, the table given below has been prepared. The amount of water measured at the Buttes is the basis of comparison, 90 per cent of the volume being taken as available at San Carlos during the years in which the observations were made. This table is given in order to determine the proper heights of dams to be constructed either at San Carlos or at the Buttes. From the volumes available annually have been deducted the contents of the reservoirs with the dams agreed upon for consideration in this report, and a column both for the Buttes and for San Carlos is given, showing the surplus water each year.

Volume, in acre-feet, available at the Buttes and at San Carlos, and surplus above capacity of respective reservoirs. (Page 30.)

[Capacity of the Buttes reservoir, 174,040 acre-feet. Capacity of San Carlos reservoir, 241,396 acre-feet.]

Years.	The Buttes.		San Carlos.	
	Available.	Surplus.	Available.	Surplus.
1890	523,775	349,735	471,398	230,002
1896	616,206	442,166	554,585	313,189
1897	570,205	396,165	513,185	271,789
1898	363,902	189,862	327,512	86,116
1899	353,639	179,599	318,275	76,879
Mean	469,093	295,053	422,184	180,788

(Pages 31–32.) The year 1897 is one of approximately average rainfall, and in this year twice as much water was available for storage, either at San Carlos or at the Buttes, as the reservoir could hold. * * * The year 1899 is among the years of low run-off and rainfall. Numerous people were asked concerning the relative dryness of the year 1899 in Arizona. There was a unanimous verdict expressed to the effect that it was the dryest year which we have had in the last 10, as regards both rainfall and the amount of water in the streams. From the table of volumes available at the Buttes and at San Carlos, the surplus which is estimated for the year 1899 is seen to be 179,599 acre-feet at the Buttes and 76,879 acre-feet at San Carlos. There is still a margin for drier years than the ones through which we have just passed.

It is, of course, impossible to predict absolutely that either of the reservoirs as projected would always be filled, but there is a probability, if not certainty, that in all ordinary years of excessive rainfall and in all years of ordinary drought the reservoirs will be more than filled, and that only in conditions of excessive drought surpassing those of record and of memory is there a possibility that the reservoir as planned, either at the Buttes or at San Carlos will not be completely filled. Even should it not be completely filled, it is certain that a partial supply will always be available, as the irrigated lands supplied from this source can readily be brought through one season of drought without serious damage. These periods of excessive drought are not likely to occur oftener than once every 15 years.

From the data and tables given in the previous paragraph (see original report, Water Supply Papers, No. 33, for complete tabulations), it is considered that, as far as the water supply is concerned, a dam 170 feet high at the Buttes, storing 174,000 acre-feet of water, or a dam 130 feet high at San Carlos, storing 241,396 acre-feet of water can be built with every assurance of success. The statement is ventured that there are no reservoirs in arid America that have a more certain water supply, proportional to their capacity, than these proposed reservoirs on the Gila River.

SILT.

(Page 36.) On page 32 of Mr. Davis's report of 1896 a table is given showing the percentage of mud and solid matter carried in Gila River at the Buttes. * * *

(Page 38.) An average of 2 per cent of solids for the entire period of observation (seven months) is determined.

(Pages 40–42.) The mean annual flow of water of Gila River at San Carlos has been determined as 422,184 acre-feet. If 2 per cent of this volume is solids, there would be delivered to the reservoir 8,443 acre-feet of solids per annum. The capacity of the San Carlos Reservoir, with the dam as planned, 130 feet high to the spillway, is 241,396 acre-feet. If 8,443 acre-feet of solid matter should be delivered to this reservoir each year and should be deposited therein, it would fill in 28.5 years. These figures show the exceeding gravity of the silt proposition on Gila River. * * *

It is evident that some provision must be made to avoid the destruction of the reservoir or the building of the dam would be useless. * * * If the San Carlos Dam should be increased in height 20 feet, its storage capacity would be increased 135,780 acre-feet.

It would therefore be possible to very greatly increase the storage capacity of these reservoirs by building the dams to greater heights as the basin filled with mud. The spillways of the San Carlos Dam as planned, could be raised 1.24 feet in height, increasing the capacity of the reservoir to that extent at small cost, without endangering the structure.

The silt which is carried by the Gila River is exceedingly light and requires a number of days to settle in a test tube, and it is believed that a portion of it will remain in suspension until it is carried over the spillway or through the gates. When the irrigation country has developed to the extent that all water available from the reservoir is required, and when the reservoir has reached the point where the silting endangers the community, it probably will be advisable to construct a large storm channel around the margin of the reservoir and above the maximum water line to carry as much as possible of the water of the river. Such portion of the water as is needed for irrigation below can be passed through this canal without stopping in the reservoir and may be diverted at the proper point near the irrigated fields. This canal could be constructed of large section for the first portion of its course and the section afterwards reduced. A spillway should be located at the point where the canal is reduced in capacity and the excessive water be drawn from the top of the canal into the reservoir. A velocity may be maintained in the remaining portion of the canal sufficient to carry the silt through it to the river below the dam.

The suggested canal, being above the maximum water line, would provide an effective head for hydraulic giants for sluicing the silt which had previously been deposited in the reservoir. On favorable occasions, when the reservoir was practically empty, this sluicing or washing out of the basin could be practiced. On July 11, 1899, there was 27 per cent of mud in Gila River at the Buttes. This is the greatest amount of sediment ever observed in this river. From this it will be seen that the suspended matter is exceedingly light, and it would therefore be possible to move large quantities of this loose mud with hydraulic giants and carry it in temporary flumes, or even in the river channel itself, through openings in the dam. Experience with light silt in constructed reservoirs elsewhere shows the greatest deposits to occur where the water is deepest, which is near the dam. Here is also the greatest storage capacity of the basin.

The drop from the storm canal to the bed of the river below the dam would probably be not less than 150 feet. If 500 cubic feet of water per second should be discharged through this canal, over 8,475 theoretical horsepower could be developed. During certain periods of the year Gila River is almost dry, and this power would not be available from the canal; but when such occasions existed in the river the reservoir would necessarily be drawn upon for irrigation and power could be obtained from the discharge from the reservoir. It is possible that from 2,000 to 5,000 horsepower could be developed in this manner. The section of Arizona in the neighborhood of San Carlos is highly mineralized. Copper mines of great value are to be found at Globe and at Riverside. New and effective processes havè been discovered for reducing copper matte electrically. Fuel is high priced. On the above basis it is reasonable to presume that when the time arrives for the building of the storm canal around the reservoir, sufficient revenue can be obtained from power to pay the interest on the cost of construction of the storm ditch. This power could also be used in cleaning out the reservoir with hydraulic dredges.

While the deposit of silt in the reservoir is probably the most serious question in connection with the impounding of water on the Gila, it is believed, on the basis of the above arguments, that the situation could be controlled and that the reservoir may be made to do service through a long period of years, if not indefinitely.

PROPOSED DAM AT SAN CARLOS.

(Pages 69–70.) In determining the height of dam to be constructed at the San Carlos dam site two elements are to be considered. First, the amount of water available; second, the amount of expenditure which can be economically made.

From a study of the water supply [as] shown, a dam 130 feet in height, storing 241,396 acre-feet, is justified. The year of lowest run-off of which we have a record is 1899. The discharge of the river for this year at San Carlos was measured until the 1st of October, and a monthly discharge for October, November, and December, as determined, has been added to complete the year. This shows a surplus for the year 1899 above the capacity of the reservoir of 76,879 acre-feet. The mean surplus above the capacity of the reservoir at San Carlos is estimated at 180,788 acre-feet. * * *

The San Carlos reservoir site was the last that was discovered upon the Gila River, and consequently the last point at which investigation for bedrock was made. * * * Two holes were put down approximately on the lower toe of the dam. No. 1 was 33 feet to the right of bench mark No. 4, which is located on the left abutment, and No. 2 was 66 feet from the left abutment and approximately 30 feet from the right abutment. The depth to bedrock at hole No. 1 was 23 feet. The bedrock encountered is a very fine-grained and flinty limestone. It was so hard that only 2 feet 9 inches a day could be drilled into it with the diamond drills, which is about one-fourth the rate of progress in ordinary granite. The depth drilled into bedrock at this point was 12.5 feet.

Hole No. 2 determined the depth to bedrock to be 74 feet. Gravel was encountered at 72 feet. The rock at this hole is a blue limestone and is more easily drilled than the rock in hole No. 1. No further progress could be made on account of the high water, and this hole was abandoned and all work stopped on July 31, 1899. The information concerning bedrock is meager, but it is considered fair to estimate the maximum depth of bedrock at 74 feet. The bedrock itself is a very close-grained, hard limestone and all that could be desired for foundation purposes.

MATERIAL FOR DAM.

(Page 71.) Plate 25, *B* (Water Supply Paper, U. S. Geol. Survey, No. 33), shows a view of the left abutment of the dam. The strata dip downstream. It would be better if the dip were upstream, as there would be less danger of leakage beneath the foundation of the dam. The limestone, however, is exceedingly dense, not easily eroded, and, as will be seen on the right-hand side of the illustration, where a slide has occurred the rock a few feet beneath the surface is relatively free from seams. The abutment on the right is of much the same nature as the abutment on the left.

The rock for the construction of the dam will be obtained near the top of the two abutments. It will be excavated in such a manner as to form a channel for the flood waters to discharge over the two weirs, which are located at the two ends of the dam. Sufficient rock will be taken from these two channels, as shown by the plan, to build the entire structure, and this will be enough to furnish flood channels for the maximum flood at this point, which is estimated to be within 10 per cent of the maximum flood at the Buttes.

These quarries will be located at the end of the dam and practically on its axis, and in such position that material can readily be handled by means of cable for constructive purposes. The haul of the material will be on a down grade, and the average distance will not exceed 200 feet. This is considered an ideal location for the economic use of cables. The quarry rock has a specific gravity of 2.7 or a weight of 168 pounds per cubic foot.

On the left abutment is an exceedingly fine-grained pink limestone, much resembling flint, but showing, by analysis, percentages as follows: 55.92 carbonate of lime, 31 carbonate of magnesia, 3.70 silica, 6 alumina and ferric oxide, and 1 moisture. The gray limestone from the right abutment contains 96.65 carbonate of lime, 1.40 silica, 1.30 alumina and ferric oxide, 0.65 moisture. From an engineering standpoint it has the appearance of being a first-class building rock. The sand required for the construction of the dam could be obtained in the canyon within a few hundred feet of the dam site. It is a good building sand, but would have to be washed before its use with cement. * * * The quartzite that would be used at San Carloc is found in large ledges within 1,000 feet of the dam site. Mr. Duryee's report on sand cement is given on page 82 (Water-Supply Paper 33. See also James Dix Schuyler's report corroborating Mr. Duryee's statements.)

DETAILS OF DAM.

(These are given on pages 72 and 73 of Water-Supply Paper 33. from which these excerpts are taken, and immediately following the said description in detail on page 74 the report continues as follows:)

The safety of the structure, considering the remarkably hard bed rock on which it is to rest, the fine character of the building stone that may be used, the heavy gravity section of the dam and the weirs that have been planned, the solidity of the abutments, and the narrowness of the canyon, would be beyond question.

At a point 180 feet above the upper face of the dam * * * the canyon is but 88 feet in width between the abutment walls. This is apparently an ideal place to put down sheet piling to bedrock to intercept the underflow. The surface flow of the stream would then be diverted in a flume to a point below the dam. * * *

CAPACITY AND COST.

(Page 74.) The capacity of the San Carlos Reservoir with the height of dam proposed is the greatest of any of the reservoir sites that were found on the Gila River by this survey. * * *. The capacity of the San Carlos reservoir site is shown in the following table:

Capacity of San Carlo reservoir site.

Contour.	Area.	Contents between contours.	Total contents.	Mean depth.	Per cent of maximum depth.
	Acres.	*Acre-feet.*	*Acre-feet.*	*Feet.*	
100					
110	17.2	86.0	86.0	5.0	50.0
120	40.8	290.0	376.0	9.2	46.0
130	83.8	623.0	999.0	12.0	40.0
140	209.6	1,467.0	2,466.0	11.8	29.5
150	488.3	3,489.5	5,955.5	12.2	24.4
160	934.4	7,113.5	13,069.0	14.0	23.3
170	1,548.8	12,416.0	25,485.0	16.4	23.4
180	2,195.2	19,220.0	44,705.0	20.3	25.4
190	2,624.0	24,096.0	68,801.0	26.0	28.9
200	3,475.2	30,496.0	99,297.0	28.6	28.6
210	4,148.3	38,117.5	137,414.5	33.1	28.3
220	5,191.0	46,876.5	184,291.0	35.6	29.7
230	6,230.0	57,105.0	241,396.0	39.2	30.5
250	7,348.0	135,780.0	377,176.0	42.1	28.0
[1] 260			444,000.0		
[1] 270			512,000.0		
[1] 280			580,000.0		
[1] 290			650,000.0		
[1] 300			700,000.0		

[1] Estimated.

(Pages 75–77.) The area that will be flooded by the construction of a dam at the Narrows will be on the Apache Indian Reservation. The question of right of way would be the obtaining of the use of these reservation lands. A plane-table survey of the reservoir site was made by Mr. Cyrus C. Babb, on a scale of 2½ inches to the mile and with a contour interval of 10 feet. From this survey it was found that 587 acres of lands that have been irrigated and farmed by the Indians would be flooded; that of the remaining area, 4,405 acres are irrigable, the remainder, 3,360 acres, being nonirrigable. No improvements have been made by the Indians other than the building of brush fences and houses. The Apache is of a roving nature and does not like to live for a long period of time upon one spot. * * * In order to provide for the damage which would be done to these Indian farms, the estimate includes $20,000 for the construction of a new irrigation system for the Indians above the reservoir site. There is as much water available from the Gila River at points between San Carlos and Geronimo as near the Agency. Lands in that locality are unoccupied, are of equal fertility, could be irrigated with equal ease, and are on the reservation. If, therefore, a substantial irrigation system should be built for these Indians higher up on the river, and this should be given to them in lieu of their primitive and deficient systems that now exist, it is considered that the treatment would be fair. * * *

The agency grounds and military post were surveyed in detail on a scale of 200 feet to the inch, with 5-foot contours. The essential features of this map have been reproduced on Plate XXVIII.

While the elevation of the spillway at the dam is 130 feet above the bed of the stream, the flood line of the reservoir must be considered as being at the maximum elevation of the water passing over the weirs, or approximately 145 feet above the bed of the stream, or 245 feet above the datum of the contour surveys. This contour, while it would not include all the buildings of the military post and of the Indian Agency, would cover so great a portion of the grounds that the remainder would be practically useless.

The agency and the post are both exceedingly dilapidated and old. It has been proposed that the entire agency be moved to a more desirable location about 8 miles above, on the San Carlos River, where, in fact, the greater number of the Indians are located. A handsome new school building, which has been provided for in recent appropriations, will not be located at the old agency, but at this point higher up on the San Carlos. There is a stone school-building, storehouse and blacksmith shop at the agency. The officers' quarters are adobe, the post trader's building is a frame structure, and there are 20 frame barracks. The quartermaster's department is a series of sheds, and the remaining buildings are either adobe or of rough lumber. They are all one-story structures except the schoolhouse, and are of a very ordinary type. There is a military ice and pumping plant and an agency flour mill, which would be flooded by the reservoir.

After a careful consideration of all the buildings, and a discussion of the situation on the ground with officers in charge and those familiar with the value of the property, a total price of $60,000 is considered as sufficient to provide for all damages done. This sum has been included in the estimate. In view of the probable moving of the agency to another location and the possible abandonment of the military post, and considering the general state of dilapidation which prevails, this figure of $60,000 for the building of a new post is considered as liberal.

As will be seen by reference to the map of the San Carlos reservoir site, the Gila Valley, Globe & Northern Railway enters the reservoir basin near its head, on the Gila River, and passes up the valley of the San Carlos River, a total distance of 5.75 miles in the reservoir site. This railroad was built in the fall of 1898. A better location for the road, away from the river, was recommended by the locating engineer. It provided for the crossing of the neck of land between the Gila and the San Carlos. The location of this line is indicated by the topography on the reservoir map (Pl. XXVII). The railroad could be changed from its present location, beginning at a point 2 miles above the Gila River bridge and crossing the Gila at that point, passing over a divide on the point of land mentioned above at an elevation of less than 200 feet above the bed of the stream, crossing the San Carlos 5 miles above the San Carlos station, and joining the present line at the last-named point. The length of new construction would be 5 miles. The roadway would cost about $8,000 per mile, or a total of $40,000. The material for the roadbed would cost, approximately, $4,000 per mile, but could be moved from the old location. There would be a saving of 4 miles in distance in the new line over the old, which should compensate for the moving. There would be two bridges to move, at an approximate cost of $10,000.

The Gila bridge contains thirty-three 16-foot bents and three small spans. The San Carlos bridge has thirty-four 16-foot bents, the total cost of moving this railroad has been estimated at $50,000.

As all the material for the construction of the dam that will be shipped to San Carlos will have to pass over this railroad, including about 25,000 barrels of cement, and as the railroad will be shortened 5 miles without any serious additional grade and removed from a valley of two torrential streams, it would seem that this change of location might be readily arranged. The reason the railroad was placed in its present location was to enable it to reach the post and agency and secure that trade. With the agency removed, there would no longer be the occasion for its present location.

Estimate, San Carlos Dam.

Rubble masonry, laid in concrete, 94,730 cubic yards, at $6	$568, 380. 00
NOTE.—With sand cement, at $4.63 per barrel, or $4.28 per cubic yard. (See Duryee's report). This figure is based on half of the mass being large rock and half concrete.	
Excavation foundation, pumping, etc	150, 000. 00
1 semicircular tower, of concrete, 13,632 cubic feet, at 50 cents	6, 816. 00
1 tower, same diameter inside, 60 feet high, 4,238 cubic feet, at 50 cents.	2, 119. 00
2 tower houses, including the semicircular base of concrete, at $750 each	1, 500. 00
10 inlets for towers, at $500 each	5, 000. 00
2 balance valves, at $1,000 each	2, 000. 00
2 balance valves, at $750 each	1, 500. 00
610 linear feet of footbridge, at $10	6, 100. 00
5 miles of railway moved, at $10,000 per mile	50, 000. 00
New irrigation system above the Indian agency	20, 000. 00
Damage to agency and post buildings	60, 000. 00

Low-water diversion tunnel	$10,000.00
Wooden crib diversion dam at head of irrigation canal	20,000.00
	903,415.00
Contingencies, 10 per cent	90,341.00
Engineering, 5 per cent	45,170.00
Total	1,038,926.00

Total number of acre-feet stored is 241,396, at a rate of $4.30 per acre-foot.

EXCERPTS FROM REPORT OF JOHN H. QUINTON UPON THE SAN CARLOS IRRIGATION PROJECT.

[File No. 82024. Office of Indian Affairs. Received Oct. 13, 1910.]

The deposition of this silt is naturally a serious menace to the life of the reservoir. The value of such a reservoir would, of course, be seriously impaired in 20 years. To get rid of this silt from the reservoir and at the same time get the benefit of the silt as a fertilizing agent to the land is the problem which has to be solved. This, however, is not so difficult a problem as it appears at first sight. It could be done at a reasonable cost in the following manner: If a conduit with inlet towers a mile apart and 50 or 60 feet above the bottom of the reservoir, or at such an elevation above the bottom as would allow that portion of the reservoir below it to fill with silt without seriously impairing the reservoir as a storage basin, is constructed, and this conduit is laid through the dam and discharged in the wasteway, a dredging plant could be kept, after a few years of accumulation of silt in the reservoir, running a continuous stream of silty water into the lowest opening above the water in the nearest tower with no lift for pumping to exceed 10 feet or with a greater length for the delivery pipe than one-half mile. In this way not only would the reservoir be held at a uniform capacity, but the silt could be carried to the land, of which it is a most valuable fertilizer, instead of filling up the reservoir.

When it is considered that after a few years cultivation this land will need a fertilizer the value of this silt can hardly be overestimated. Good orange land in Redlands, Cal., in bearing, needs about $20 worth of fertilizer annually for each acre. Even at an estimate of $5 per acre only, it will be seen that the expenditure for dredging would be fully justified on the score of fertilizing the land alone without considering the value of the water which could be stored n the reservoir with the silt removed. Such a plan could be easily worked out for this reservoir. The conduits and towers would be built at the same time as the dam and the reservoir allowed to fill with silt to such a level as would not seriously interfere with its capacty. Dredging operations would not have to be commenced for sevral years. The removal of the silt, then, becomes a question of the toring up and pumping of the silty water into tower inlets and conveying it thence to the conduit of its natural watercourse, the channel of the Gila River.

LOS ANGELES, *November 4, 1911.*

Mr. SAMUEL ADAMS,
First Assistant Secretary of the Interior, Washington, D. C.

SIR: I send herewith, as requested, a sketch showing general rrangement of pipes, towers, and conduits necessary for removing silt from reservoirs. The water, bearing silt, can be siphoned out of the reservoir, the only expenditure of power necessary being for agitating the water and silt at the end of the suction pipe and a small amount for exhausting the air from the siphon occasionally.

It is estimated that the silt could be removed in this way for about $20 an acre-foot. At this rate an annual assessment of $2.50 an acre on 60,000 acres of land would pay for removing 7,500 acre-feet of silt annually.

The details may present some difficulties, but there is no doubt in my mind that they could be overcome by skillful engineers, using modern machinery and methods.

Yours, very respectfully,
J. H. QUINTON,
Consulting Engineer.

EXCERPTS FROM HEARINGS BEFORE THE SUBCOMMITTEE OF THE COMMITTEE ON INDIAN AFFAIRS OF THE UNITED STATES SENATE ON THE INDIAN APPROPRIATION BILL FOR THE YEAR ENDING JUNE 30, 1902.

SAN CARLOS (ARIZ.) DAM.

Senator STEWART. How many acres do you think could be irrigated by the building of such a dam (San Carlos Dam)?

Mr. NEWELL. At least 100,000. I should say 120,000 acres would be the minimum capacity.

Senator PETTIGREW. How much would the dam cost?

Mr. NEWELL. About a million dollars ($1,038,926). It is on the Apache Reservation, and it will be necessary to obtain title from them. These Indians could be moved farther up on the stream, where the valley opens, or a number of them could be settled above the flood line of the reservoir.

Senator PETTIGREW. Do you flood above the dam so far as to disturb the agency buildings?

Mr. NEWELL. Yes; the estimate above given includes the cost of moving the agency buildings, the relocation of the railroad, and the construction of a modern agency.

Senator PETTIGREW. How long would that pond be?

Mr. NEWELL. Nearly 15 miles.

Senator STEWART. What would be the height of the dam?

Mr. NEWELL. Two hundred and twenty feet above the lowest point of the bedrock and 142 feet above the present surface, the spillway being 130 feet above the present stream.

Senator STEWART. What kind of foundation and side walls have you?

Mr. NEWELL. A very fine-grained limestone about as hard as granite.

Senator JONES. How deep would the water be?

Mr. NEWELL. One hundred and thirty feet at the dam.

Senator STEWART. A dam 130 feet high would be a terrible dam to break.

Mr. NEWELL. There need be no danger of that. It would discharge in a box canyon extending for 30 miles and then the canyon opens into flats. We do not intend that it shall break. * * *

* * * The rocks at the Buttes forming the foundations were not sufficiently strong to sustain the necessary structure, and it was then decided to move the drilling machinery to San Carlos, where the foundations were found to be good.

Senator **Stewart**. What is the chance to get a good strong foundation for the dam?

Mr. **Newell**. The foundations at San Carlos are as good as can be found anywhere.

[From Douglass Daily International, Sept. 8, 1911.]

PIMA INDIANS TO SEE SECRETARY OF INTERIOR.—ONE THOUSAND WARDS OF THE NATION WILL PRESENT PETITION TO FISHER.—MEMBERS OF SACATON RESERVATION WILL URGE SAN CARLOS IRRIGATION PROJECT.

In the absence of Secretary Brown, of the Casa Grande Board of Trade, S. J. Garrett, who is in charge, is arranging to give Secretary Fisher, of the Department of the Interior, a rousing welcome, says the Tucson Star. Secretary Fisher will visit the Casa Grande valley shortly after his return from his present trip to Alaska. Mr. Brown has gone to meet him.

One of the plans of Mr. Garrett is to have 1,000 Indians from the Sacaton Reservation at Casa Grande to meet Secretary Fisher and place their case before him. They claim that the San Carlos dam site will supply their lands with water, and that is what the Government promised to them some time ago. They will have a long petition setting forth their grievances and making their requests. Secretary Fisher is on record as a friend of the Indian, and it is believed this petition will have its effect. The Indians are deeply interested in the project and are now making their arrangements to see Mr. Fisher.

The Pima Indians of the Gila River Reservation held a monster mass meeting on Wednesday, August 30, to protest against the injustice of the Government in attempting to allot their lands before having gotten water for them. The Indians will probably refuse to accept their allotments until water is actually supplied to the land.

The plan of certain parties to have the Indians all bunched to a little corner of the reservation near San Tan, compelling them to leave their farms which they and their ancestors have cultivated for centuries, has been frustrated recently by the old and faithful Indian Rights Association.

Now it is proposed to make allotments of land to the Indians without having obtained water for the same, except a very small part of it. The promise of the Government to the Pima Indians was that each individual should receive a 5-acre allotment with assured water.

About two months age it was proposed to change that plan, to break that promise, and allot only 10 acres to a family. The Indian Rights Association also blocked that scheme.

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